Digital Recording Studio

D32XD Xtended Definition

D16XD Xtended Definition

Owner's Manual

TouchView Graphical User Interface

REMS

CD-RW

24bit/96kHz

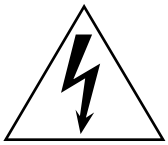
KORG

Ⓔ ①

IMPORTANT SAFETY INSTRUCTIONS

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Mains powered apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.
- Clean only with dry cloth.
- Do not block any ventilation openings, install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet. (for U.S.A. and Canada)
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- Do not install this equipment on the far position from wall outlet and/or convenience receptacle.
- Do not install this equipment in a confined space such as a box for the conveyance or similar unit.
- Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

WARNING:
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.



The lightning flash with arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

THE FCC REGULATION WARNING (for U.S.A.)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Unauthorized changes or modification to this system can void the user's authority to operate this equipment.

CE mark for European Harmonized Standards

CE mark which is attached to our company's products of AC mains operated apparatus until December 31, 1996 means it conforms to EMC Directive (89/336/EEC) and CE mark Directive (93/68/EEC). And, CE mark which is attached after January 1, 1997 means it conforms to EMC Directive (89/336/EEC), CE mark Directive (93/68/EEC) and Low Voltage Directive (73/23/EEC).
Also, CE mark which is attached to our company's products of Battery operated apparatus means it conforms to EMC Directive (89/336/EEC) and CE mark Directive (93/68/EEC).

Handling of the internal hard disk

Do not apply physical shock to this device. In particular, you must never move this device or apply physical shock while the power is turned on. This can cause part or all of the data on disk to be lost, or may damage the hard disk or interior components.

When this device is moved to a location where the temperature is radically different, water droplets may condense on the hard disk. If the device is used in this condition, it may malfunction, so please allow several hours to pass before operating the device.

Do not turn the power on and off repeatedly. This may damage the D32XD/D16XD.

This device begins to access the hard disk immediately after the power is turned on.

Never turn off the power while the HDD access indicator is lit or blinking. Doing so can cause all or part of the data on hard disk to be lost, or may cause malfunctions such as hard disk damage.

If the hard disk has been damaged due to incorrect operation, power failure, or accidental interruption of the power supply, a fee may be charged for replacement even if this device is still within its warranty period.

Data handling

Incorrect operation or malfunction may cause the contents of memory to be lost, so we recommend that you save important data on a CD or other media. Please be aware that Korg will accept no responsibility for any damages which may result from loss of data.
Also, when digitally recording copyrighted audio material from a DAT or CD etc., you must obtain permission for use. Please be aware that Korg will accept no responsibility for any copyright violations which may occur through your use of this product.

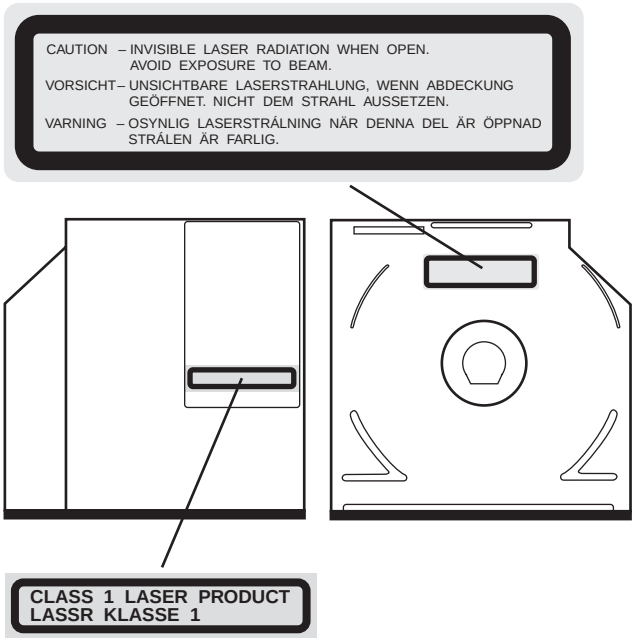
COPYRIGHT WARNING

This professional device is intended only for use with works for which you yourself own the copyright, for which you have received permission from the copyright holder to publicly perform, record, broadcast, sell, and duplicate, or in connection with activities which constitute "fair use" under copyright law. If you are not the copyright holder, have not received permission from the copyright holder, or have not engaged in fair use of the works, you may be violating copyright law, and may be liable for damages and penalties. If you are unsure about your rights to a work, please consult a copyright attorney. **KORG TAKES NO RESPONSIBILITY FOR ANY INFRINGEMENT COMMITTED THROUGH USE OF KORG PRODUCTS.**

This product has been designed and manufactured according to FDA regulations "title 21. CFR. chapter 1, subchapter J. based on the radiation Control for Health and Safety Act of 1968," and is classified as a class 1 laser product. There is no hazardous invisible laser radiation during operation because invisible laser radiation emitted inside of this product is completely confined in the protective housings.
The label required in this regulation is shown below.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

		Optical pickup
Type	:	PU-W216
Manufacturer	:	TEAC CORPORATION
Laser output	:	Less than 2mW (Play) and 45mW (Record) on the objective lens
Wavelength	:	777-787nm


CAUTION – INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
VORSICHT – UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.
VARNING – OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD STRÅLEN ÄR FARLIG.
CLASS 1 LASER PRODUCT
LASSR KLASSE 1

* Company names, product names, and names of formats etc. are the trademarks or registered trademarks of their respective owners.

Cautions when using the CD-R/RW drive

- During CD reading and writing operations, keep the unit in a horizontal position.
- Do not use the unit in extremely cold or hot locations.
- Do not use the unit in extremely humid locations.
- Do not use the unit in dusty or smoky locations.
- Do not subject the unit to vibration or strong physical shock. In particular, this unit is vulnerable to shock during CD reading and writing operations.
- Normally, you will be able to open the CD tray by pressing the eject button. However if this fails, you can forcibly eject the tray by inserting a thin object (such as a straightened paper clip) into the emergency eject hole.
- Do not store the unit in hot or humid locations.
- Never touch the focusing lens.
- Do not use commercially available lens cleaners.
- Do not transport the unit with a disc left in the tray.
- Do not leave the unit with the disc tray open.

CD-R/RW handling

Please observe the following points when handling discs. Failure to observe these points may cause problems such as data not being written correctly, loss of recorded data, or drive malfunction.

- Do not leave discs in direct sunlight, or in locations of high temperature or high humidity.
- Do not touch the surface of a disc. Hold a disc by its edges.
- Remove dust or dirt from the surface of a disc. To remove dust, use an air duster or cleaner.
- Do not affix labels to a disc, or write on a disc in locations other than specified.
- Do not use chemicals or detergent to wipe a disc.
- Do not bend or drop a disc.

Responsibility for loss of data

Korg Corporation will accept no responsibility for any damages (direct or indirect, whether sustained by the customer or by a third party) resulting from loss of or damage to data written on a CD-R or CD-RW disc.

Printing conventions in this manual

Differences between the D32XD and D16XD

In the text and illustrations of this manual, explanations enclosed by [*] refer to the D16XD. Unless there are significant differences, the illustrations and LCD screens are taken from the D32XD.

Keys, buttons, and knobs

Words or values printed on the panel, such as **MASTER** fader or **REC/PLAY** key are printed in bold type, and parameter values are printed in **bold type** within **"double quotation marks."**
Bold type is also used to indicate content within the text that we wish to emphasize.

Parameters that appear in the LCD screen " "

Parameters that appear in the LCD screen are printed within "**double quotation marks**." However, **bold type** is also used for screen items such as the **Yes** button and **CH** cell.
The D32XD/D16XD uses Korg's TouchView LCD technology, allowing a parameter, cell, button, or icon displayed on the screen to be selected simply by touching it. For most operations, you can also use the cursor keys (◄, ►, ▲, ▼) to move to the desired parameter, and press the **ENTER** key to make a selection.
The example operations described in this manual mainly use the TouchView panel.

Steps (1) (2) (3) ...

Steps in a procedure are indicated as (1) (2) (3) ...

(→p.■■)

This indicates a reference page within this manual.

, note, i.e.

These symbols respectively indicate points of caution, notes of advice, or examples.

..., "xx" tab page

This indicates a page displayed in the LCD screen. To access this page, press the ... key of the top panel, and then press the "xx" tab in the LCD screen.
You can use the screen to move between tab pages.

..., ..., "xx" tab page

The **MIXER** key and **CD** key of the top panel display a page jump menu in the LCD screen before displaying the tab pages. Press the ... button in the LCD screen, and then press the "xx" tab. When you press the **MIXER** key or **CD** key, you will return to the page jump menu selection screen.

LCD screens

The parameter values shown in the LCD screens printed in this manual are explanatory examples, and may not necessarily match the displays that appear on your D32XD/D16XD.

Illustrations of the D32XD/D16XD

Unless otherwise specified, illustrations of the D32XD/D16XD printed in this manual assume the optional 8-channel analog input board (AIB-8) is installed.

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Introduction

Thank you for purchasing the Korg **D32XD Xtended Definition/D16XD Xtended Definition Digital Recording Studio**.
To take full advantage of the D32XD/D16XD's functions, and to enjoy trouble-free use, please read this manual carefully and use this product only as directed. Keep this manual in a safe place for future reference.

Included items

Make sure that the following included items are present.

- **Owner's Manual (this document)**
- **Power cable**

Before using the D32XD/D16XD for the first time

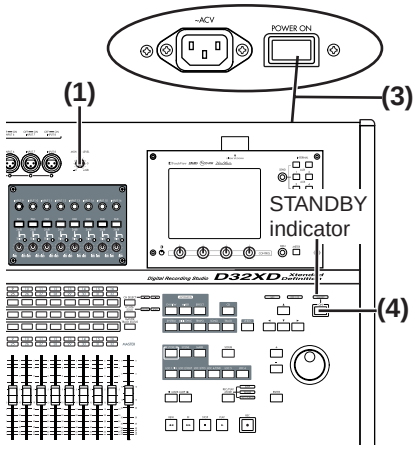
Important

Please observe the following points when using the D32XD/D16XD.

Power on/off

The D32XD/D16XD is a precision instrument, similar to a personal computer, equipped with an internal hard disk drive and a CD-R/RW drive. When turning the power on and off, follow the procedures shown below.

Before you turn on the power, make sure that the power cable is firmly plugged into the D32XD/D16XD and into an AC outlet.



● Power-on

(1) Lower the D32XD/D16XD's MONITOR LEVEL knob to the –∞ position. Set the volume controls of your external equipment to their lowest position.

(2) Turn on the power of external input devices such as keyboards that are sending audio to the D32XD/D16XD.

(3) Turn on the main power switch (POWER ON) located on the rear panel of the D32XD/D16XD.
The STANDBY indicator will light. The D32XD/D16XD is now in the "standby" condition.

(4) Press the power (ON) key located on the top panel to turn the D32XD/D16XD on.
The opening screen will appear in the LCD, and then the **"SelectSong"** tab page of SONG page mode will appear. The next time you turn the power on, the song that been selected prior to the previous power-off will be selected.

(5) Turn on the power of your external output devices, such as the monitor system to which the D32XD/D16XD is sending audio.

If the power is turned off accidentally while the D32XD/D16XD is being used, the D32XD/D16XD itself or its internal hard disk drive may be damaged.

The opening screen when the optional AIB-8, ACB-8, and DIB-8 are installed (D32XD)

● Power-off

(1) Lower the D32XD/D16XD's MONITOR LEVEL knob to the –∞ position.

(2) Turn off any devices connected to the D32XD/D16XD's outputs, such as your monitor system.

(3) Hold down the D32XD/D16XD's power (ON) key (for 2–3 seconds) and the shutdown LCD screen appear.
If you press the **Yes** button in the LCD screen, the song will be saved automatically, and the D32XD/D16XD will enter the standby state. This process is called "**shutdown**."
If you press the **No** button, you will return to the previous screen.

(4) Press the main power switch (POWER ON) located on the rear panel of the D32XD/D16XD to turn off the power.

(5) Turn off any devices (such as keyboards) connected to the D32XD/D16XD's inputs.

When turning the power off, you must perform the shutdown process. Never turn off the main power switch or disconnect the power cable before shutdown has been completed.

If you turn off the main power switch or disconnect the power cable before shutdown has been completed, data or user settings will be lost, and the hard disk may be damaged.

The audio you record into the D32XD/D16XD and the mixer and effect settings you make are automatically saved when you select a song or perform the shutdown process.

Perform the shutdown process when you have finished all activities such as playback or recording. If you will not be using the D32XD/D16XD for an extended period of time (for example when you have finished working for the day), you must turn off the main power switch on the back of the D32XD/D16XD.

TouchView LCD

Both the angle and contrast of the LCD (→p.9) can be adjusted for optimal visibility. If it seems that the items displayed in the TouchView LCD are not aligned with the locations required to select them, please perform the Calibration operation (→p.95).
In the default factory settings, the D32XD/D16XD is set to sound a beep when you select any parameter or operation shown in the touch screen. If you want to silence this beep, press the **SYSTEM** key, and in the **"Control"** tab page turn the **"Beep"** setting off (→p.126).

Setting the calendar

When a song is saved, the file is time-stamped with the date and time provided by the internal calendar. Perform the following procedure before you first use the D32XD/D16XD for the first time, after you have replaced the calendar battery, or if you need to change the calendar date and time for any other reason.

When the D32XD/D16XD is shipped, the calendar time will not have been set.

(1) Press the SYSTEM key.

(2) Press the "Control" tab.

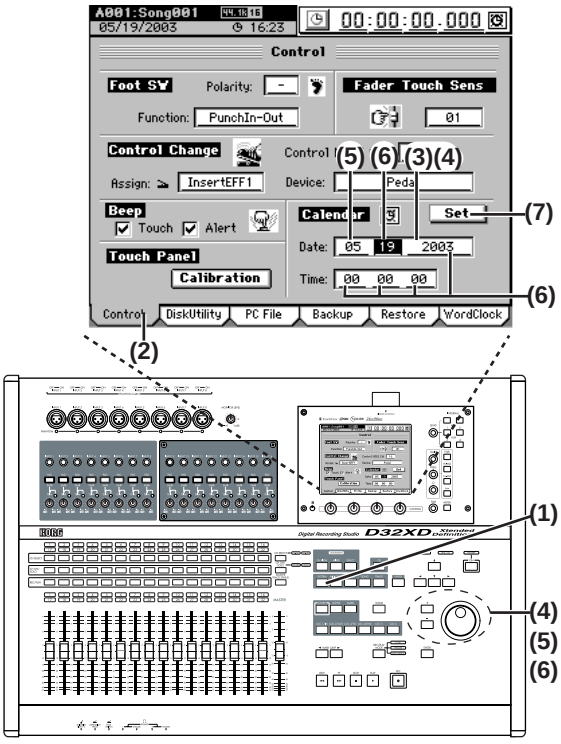
(3) Press the year area of the Date field to highlight it.

(4) Use the value dial or the +/– keys to set the year.

(5) Press the month area of the Date field to highlight it, and set it in the same way.

(6) In the same way, set the day, hour (in 24-hour format), minute, and second areas of the Date field.

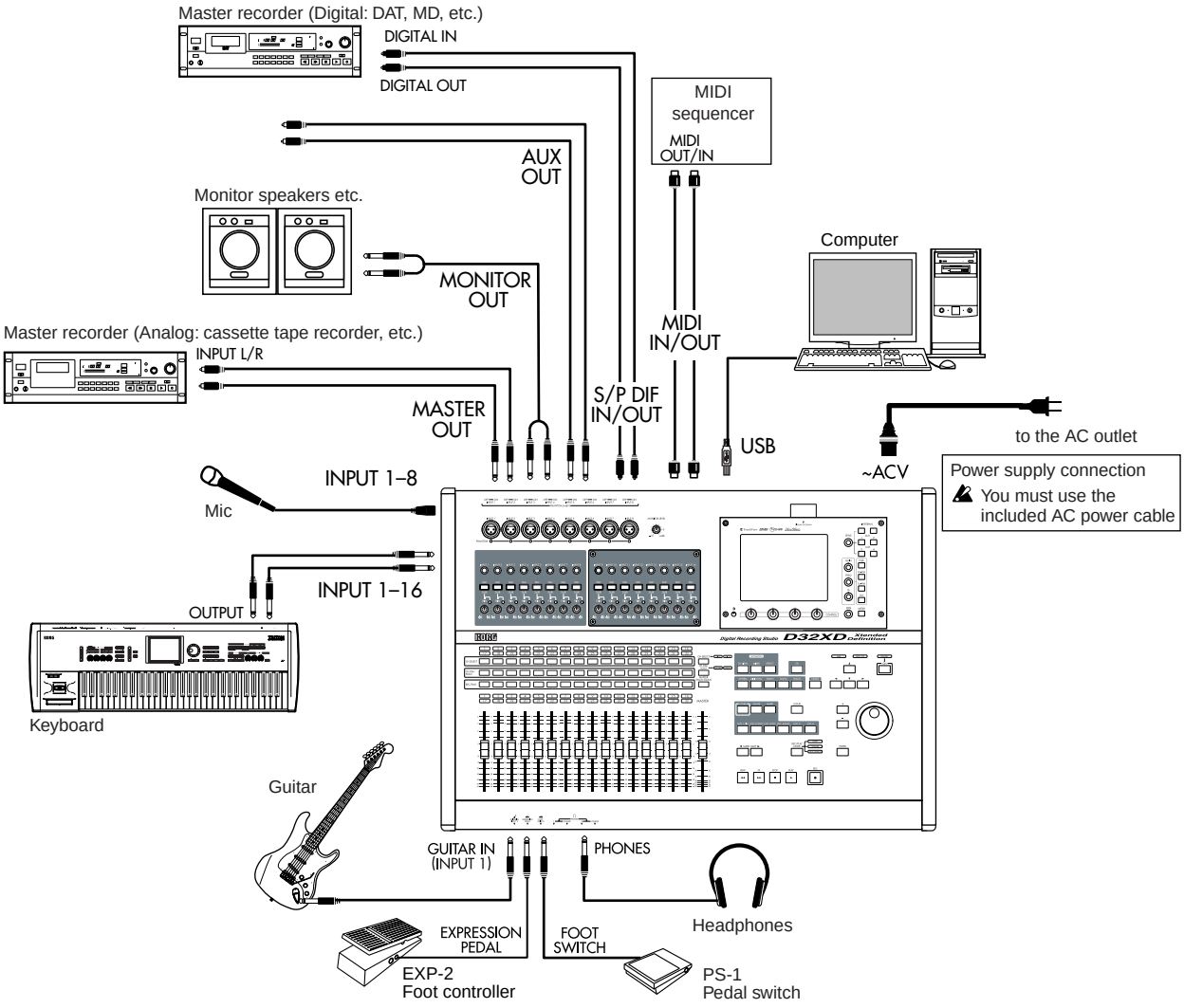
(7) Press the Set button to finalize the setting.



note *The internal calendar will continue operating even if the D32XD/D16XD's power is off. This means that once you set the internal calendar, you will not need to set it again except in special circumstances, such as after replacing the calendar battery.*

Connection example

This diagram shows typical connections when using the D32XD/D16XD. Connect your equipment as appropriate for your system.



Cautions when making digital connections

- *If any of the synchronization settings of the D32XD/D16XD do not match those of the connected device, noise may occur. Turn down the faders or minimize the volume of your monitor speakers before you change settings.*
- *If you select a song that has a different sampling frequency, noise may occur when the change occurs. Turn down your monitors before you make such a change.*

Main features

Features enclosed by [*] are for the D16XD.

♦ 32 [*16]-track digital multi-track recorder

The D32XD/D16XD provides studio-quality sound with 64-bit internal processing, 24/16-bit recording and playback, and 96 kHz/48 kHz/44.1 kHz uncompressed recording.

When using 48 kHz/44.1 kHz sampling and 16-bit depth ❖1

Maximum simultaneous recording/playback 16 tracks/32 [*16] tracks

When using 48 kHz/44.1 kHz sampling and 24-bit depth ❖1

Maximum simultaneous recording/playback 8 tracks/16 tracks

When using 96 kHz sampling and 24-bit depth ❖1

Maximum simultaneous recording/playback 4 tracks/8 tracks

Each track (including the master track) has eight virtual tracks, allowing you to use a total of 256 [*128] + 16 tracks for each song.

❖1 The number of simultaneously recordable tracks will be different when you use punch recording.

♦ XLR input jacks with +48V phantom power, analog inputs, dedicated guitar input jack, and digital connectors

To maximize the benefit of the D32XD/D16XD's full-digital processing, all of the analog inputs use high-performance balanced pre amps.

The eight +48V phantom-powered XLR input jacks contain high-performance mic preamps. Each of the phantom power supplies can be switched on/off individually, so you are free to mix condenser mics and dynamic mics.

All phone jack inputs (except for the guitar input jack) are the TRS balanced type. Unbalanced inputs may also be connected to these jacks. A wide range of audio sources can be connected, ranging from mic level all the way up to +28 dBu, exceeding normal professional levels. A dedicated guitar input jack is also provided.
The S/P DIF digital input supports sampling frequencies of 96 kHz/48 kHz/44.1 kHz, and 24- and 16-bit depths.

♦ 8-channel analog input board (AIB-8: optional) provides a total of sixteen analog inputs

Using the optional AIB-8, you can add eight more analog inputs, for a total of sixteen. Balanced TRS jacks are provided, and unbalanced inputs may also be connected to these jacks.

♦ 8-channels of analog compression provided for the analog input section

Analog compressors allow you to apply dynamics processing to adjust the level of the analog signal before it is converted into digital data. This provides the distinctive character of analog compression that cannot be duplicated by a digital compressor, and can prevent clipping before A/D conversion.

An analog compressor board (ACB-8: optional) can also be installed on the 8-channel analog input board (AIB-8: optional). If the AIB-8 and ACB-8 are both installed, you can assign analog compressors to all sixteen analog inputs.

♦ Installable ADAT I/O board (DIB-8: optional)

This board provides eight channels of ADAT format digital input and output, plus word clock input/output.
ADAT input/output supports 48 kHz/44.1 kHz sampling frequencies and 24/16-bit depths.

♦ Mixer section provides four-band EQ on each channel/track and eight-band master EQ

The 56-channel/14-bus [*40-channel/12-bus] mixer section provides full-parametric 4-band equalization with selectable high/low shelving on the mixer channels, and 2-band shelving EQ on the sub-mixer.
The EQ applied to the input during recording is independent from the EQ applied to the track during playback, so there is no danger of applying the same EQ twice – a problem that often occurs on MTR units containing conventional analog mixers.
Eight-band full parametric equalization is provided for the master EQ, allowing you to make detailed adjustments to the tone during mastering.

♦ 100 scene memories, and MIDI control of mixer parameters

For each song, you can store one hundred scenes containing the fader, EQ, pan, and effect settings of the mixer section. Scenes can be easily recalled when desired as general-purpose settings. You can also use MIDI to switch scenes, and to transmit and receive mixer parameters such as fader and pan.

♦ Scene automation switches scenes automatically (D16XD)

Scenes can switch automatically according to elapsed playback time.

♦ Record and play back mixer parameter automation events in synchronization with the song (D32XD)

Scene changes and mixer events such as fader movements and panning operations can be recorded and reproduced according to elapsed playback time. Scene automation can be used to switch scenes automatically.

♦ Automation playback with moving faders (D32XD)

The D32XD uses seventeen 100 mm motorized - or "flying" - faders to adjust the channel balance in realtime. When recording, playing back, or recalling a scene when automation is on, the faders will move to their programmed locations. These faders are touch-sensitive. By touching a fader that is being automatically moved by event automation, you can halt automatic changes for that channel.

♦ Powerful modeling effects operated by control knobs

The built-in effects utilize Korg's proprietary "*REMS*" modeling technology to deliver precise and powerful modeling sounds.
You can use the four control knobs to edit effect parameters quickly and intuitively.
The modeling effects include simulations of vacuum tube preamps, classic amps and cabinets from around the world, and mic simulators for vintage tube mics and modern studio condenser mics.

♦ Three independent effect systems for simultaneous use

You can use up to a total of twenty-seven [*eleven] effects, each with internal 56-bit processing: 24 [*8] insert effects, 2 master effects, and 1 final effect.
For each effect, you can select an effect program consisting of one of 52 different effect algorithms (combinations of basic effects).
The effect programs include 128 preset programs created by professional musicians and studio engineers, and 128 user effect programs that you can use to create, edit and store your own custom effect settings.

In addition, each song has 32 editable song effect programs.
You can also control effects in realtime from an external MIDI controller or from an expression pedal (EXP-2, XVP-10: sold separately).

♦ Sophisticated editing functionality

Non-destructive editing functions (possible only on digital recorders) allow you to perform numerous edits without compromising the high audio quality. In addition to auto and manual punch-in/out, there are Undo and Redo functions that allow you to audition the "before" and "after" versions of any edit, before making it permanent. You can use Undo to retrace your steps through the sixteen most recent recording or editing operations! A total of twelve types of track editing operation are provided, including a convenient Time Expansion/Compression function that lets you match up phrases of differing tempo after recording, and a Normalize function that appropriately boosts the volume and increases the dynamic range of low-level recordings.
For each song you can assign one hundred markers (with names) and six locate points to keep track of (and instantly access) the locations of all your edits.

♦ Easy operation

The TouchView system lets you operate the D32XD/D16XD simply by touching the large 320 × 240 pixel LCD screen – a revolutionary leap in fast, intuitive operation.
Knobs for editing the effects are located below the large LCD screen, and dedicated EQ and send knobs are located to the right of the screen, making it easy to adjust these parameters in realtime.

♦ Internal hard disk drive

A high-capacity hard disk drive is built-in, providing approximately three hours of recording time per GB (16-bit, 44.1 kHz, single track recording).

♦ CD-R/RW drive for creating audio CDs

You can use the CD drive to backup/restore song and effect data, import/export audio files, and create audio CDs. You can also insert an audio CD in the drive, and patch the audio to a mixer channel for recording or playback. You can create an audio CD either by writing songs individually using Track At Once or by using Disc At Once with the album edit function.

♦ USB connection for easy data exchange with your computer

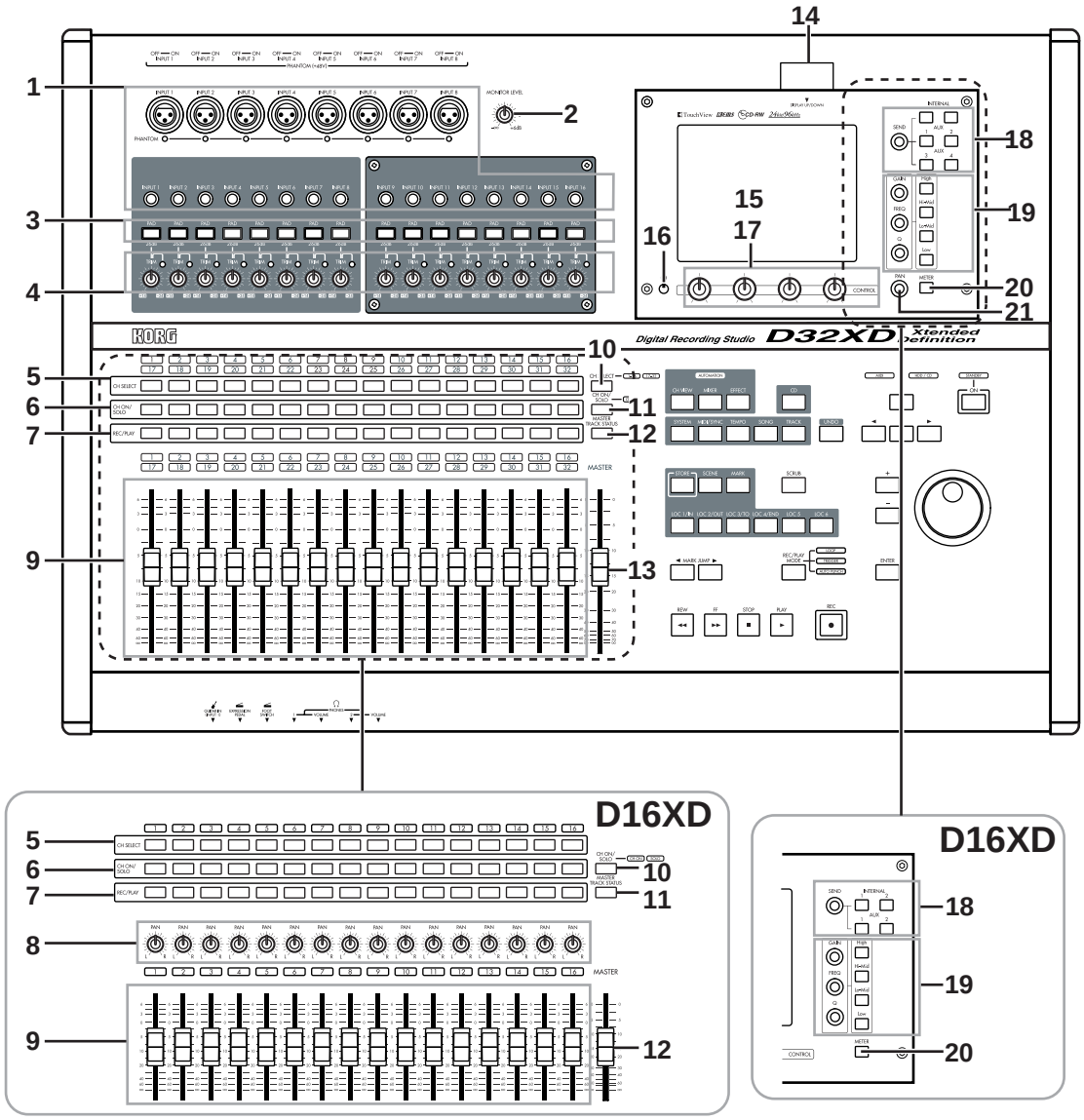
The USB connector makes it easy to exchange data with your computer. You can connect the D32XD/D16XD to your computer and use 2 GB of the D32XD/D16XD's hard drive capacity as a PC drive for shared data.

What is REMS?

REMS (**R**esonant structure and **E**lectronic circuit **M**odeling **S**ystem) is Korg's proprietary technology for digitally recreating the numerous factors that produce and influence a sound, ranging from the sound-production mechanisms of acoustic instruments and electric/electronic musical instruments, to the resonances of an instrument body or speaker cabinet, the sound field in which the instrument is played, the propagation route of the sound, the electrical and acoustic response of mics and speakers, and the changes produced by vacuum tubes and transistors.

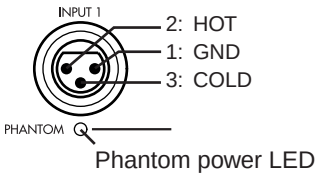
Parts and their function

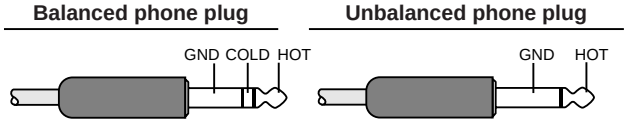
Top panel



1 INPUT 1, INPUT 2...INPUT 8 jacks

Connect mic or line sources (such as keyboards) to these input jacks.
Both XLR jacks and balanced 1/4" TRS phone jacks are provided.
You may also connect unbalanced phone plugs to the 1/4" jacks.
Each XLR jack can provide +48V phantom power for condenser mics. The LED located below each XLR jack will light if phantom power is switched on for that jack.





note *The optional 8-channel analog input board (AIB-8) can be installed to add INPUT 9–16 using balanced 1/4" TRS phone jacks (unbalanced phone plugs may also be connected).*

If you insert a plug into a TRS phone jack, no signal can be input from the corresponding XLR jack. If you want to use an XLR jack, do not connect the corresponding TRS phone jack.

*The balanced XLR jacks for **INPUT 1–8** provide +48V phantom power for use by condenser mics; you can switch this on/off independently for each channel.*

Your equipment may be damaged if you connect or disconnect a condenser mic with phantom power turned on. You must turn phantom power off before connecting condenser mics.

2 MONITOR LEVEL knob

This knob sets the volume level of the signal being sent from the **MONITOR OUT L/R** jacks.

3 PAD buttons

The pad will reduce the input level by 26 dB. The pad is on when the switch is pressed in. You can extend the adjustable range of the **TRIM** knob by turning the pad on when using a line input.
Leave the pad switched off for a low-output device such as a mic or guitar.

4 TRIM knobs

These knobs adjust the input level. The LED located at the upper right of each knob will light to indicate the following conditions.

Lit green: an input signal is present
Lit orange: nominal input level
Lit red: input overload

Use the **TRIM** knob to make adjustments so that this indicator does **not light red** when the input level from the connected device reaches its loudest point.
The **TRIM** knob has a range of +14 to –34 dBu when **PAD** is on, or –12 to –60 dBu when **PAD** is off.
The markings around the knob indicate the input level.
The input level will depend on the instrument or performance, but the approximate ranges are as follows.

–60 – –40 dBu: mic input
–30 dBu: guitar, bass guitar
–10 dBu: consumer audio devices such as a CD player
+4 dBu: keyboards or studio equipment

*If the **TRIM** knob is raised when nothing is connected to the input, hum or noise may result. Keep the trim knob at its lowest setting when the channel is not in use.*

5 CH SELECT keys

Pressing one of these keys will select the track that is currently active in the **"Ch View," "EQ/ATT,"** or the various **SEND** tab pages. The selected **CH SELECT** key will light.

6 CH ON/SOLO keys

The operation of these keys will depend on the mode selected by the "CH ON/SOLO mode key" (See item 11).
In **CH ON mode**, these keys enable/disable each channel. They can be used as a channel mute function. The key will be lit when on (enabled) and dark when off (disabled).
In **SOLO mode**, pressing a key will turn the SOLO on/off for that channel. You may solo more than one channel if desired. In SOLO mode, the selected keys will blink.

7 REC/PLAY keys

These keys switch each recorder track between the record and playback modes. Each time you press one of these keys, the track status will change.

Key lit green: PLAY (playback)
Key lit red: REC (record)

If the master track **MASTER TRACK STATUS** key is set to PLAY, all tracks will automatically be muted (Key dark).

8 PAN knobs (1...16) ---------- D16XD

These knobs adjust the pan (left/right position) of the stereo signal being sent from each channel to the master LR bus. If pairing is on, these knobs will function as specified by the **"Pan Mode"** setting in the **"Ch Pair"** tab page.

9 Channel faders (1/17...16/32) [*(1...16)]

The faders adjust the recording/playback volume of each channel.
The D32XD has touch-sensitive moving faders.

Do not apply excessive force to the moving faders. Doing so will create excessive load, and may damage the motors of the moving faders.

10 1–16/17–32 key ---------- D32XD

This switch selects whether the channel faders, **REC/PLAY** keys, **CH ON/SOLO** keys, and **CH SELECT** keys will apply to channels 1–16 or to channels 17-32. Each time you press this, the setting will alternate between 1–16 and 17–32, and the 1–16 (green) or 17–32 (orange) indicator at the right will light.

11 CH ON/SOLO mode key

This key switches the mode of the **CH ON/SOLO** keys. Each time you press this key, the indicator at left will indicate whether the CH ON (lit green) or SOLO (lit orange) mode is selected. This setting will automatically switch to the SOLO mode when you select SOLO in the **MIXER**, **SOLO/MONITOR**, **"MONITOR"** tab page.

12 MASTER TRACK STATUS key

This key switches the master track between recording/playback/mute. The setting will alternate each time you press this key.

Key lit green: PLAY (playback)
Key lit red: REC (record)
Key dark: muted

13 MASTER fader

The **MASTER** fader adjusts the overall volume. When the master track is being recorded, this fader sets the recording level. The D32XD has touch-sensitive moving faders.

note *Normally, you will leave the **MASTER** fader set to 0 dBu while recording on the individual tracks, and use the channel faders to adjustment the mix so the output does not distort.*

Do not apply excessive force to the moving faders. Doing so will create excessive load, and may damage the motors of the moving faders.

14 DISPLAY UP/DOWN

By pressing this button on the back edge of the display, you can adjust the angle of the LCD screen over seven steps for best visibility.

Do not use excessive force to move the screen.

15 LCD screen

The D32XD/D16XD features Korg's TouchView technology. This allows you to select pages, tabs, and parameters by simply using your finger to touch the buttons, icons or edit cells shown in the LCD screen.
During recording or playback, this screen displays volume information (level meters), time data (locations), and various parameters.

note *The response of the TouchView display can be set using the Calibration operation (→p.95). Use the Calibration procedure if the location on the screen that must be touched to select an item is not perfectly aligned with where the item is displayed.*

16 LCD CONTRAST knob

This knob adjusts the contrast of the LCD screen.
The appearance of the LCD screen may differ depending on your viewing angle, so adjust the contrast using this knob for the best visibility. Turning this

knob toward the right will make the text darker, and toward the left will make the text lighter.

Depending on the content that is displayed in the LCD screen, you may notice vertical lines in the screen. This is not a malfunction.

17 Control knobs

Use these knobs to edit various effect parameters in the effect tab pages.

18 SEND knob, INTERNAL 1/2, AUX 1/2/3/4 [*AUX 1/2] keys

Use these knobs and keys to specify the send amount and destination of each send (EFF Send 1/2, AUX Send 1/2/3/4 [*Send 1/2]) and in the **"Ch View"** tab page.

Even when other tab pages are displayed, operating this knob or any of these keys will automatically open the send tab page in the display, allowing you to edit the settings immediately.

19 Equalizer knobs, equalizer band keys

In the **"Ch View"** and **"EQ/ATT"** tab pages you can use these knobs and keys to adjust the individual equalizer settings.

Even when other tab pages are displayed, operating these knobs or keys will automatically open the **"EQ/ATT"** tab page, allowing you to edit the settings immediately.

20 METER key

This key accesses a screen that shows the audio levels of the song, the presence or absence of audio events, and a list of virtual tracks (**"TrackView"**). You can also switch this to a **"FaderView"** that lets you change the position at which the level meters are inserted, or check the fader or pan positions.

21 PAN knobs ---------- D32XD

This knob adjusts the position (pan) in the master LR bus for the channel selected by the **CH SELECT** key.

22 AUTOMATION indicator

This will light when the automation function is on.

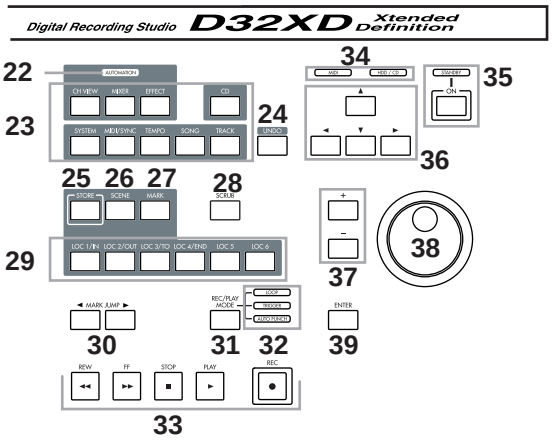
23 Page mode keys

Press these keys to move to the corresponding page mode. The **MIXER** key and the **CD** key will take you to the corresponding page jump menu screen.

24 UNDO key

The Undo function allows you to go back and listen to the audio as it was before an Edit was performed. The Redo function brings back the edited result.

You can retrace your steps through as many as sixteen prior recording or editing operations. (→p.147).



25 STORE key

Press this key to register the current time location as a locate point, a mark, or for a scene. (→p.38, 39, 52, 148)

26 SCENE key

This key stores mixer settings such as the **channel** faders, **pan** knobs, EQ, and effect send as a "scene" at the desired location in a song. If you play back with automation turned on, the stored scenes will be recalled and changed automatically. You can also edit scenes by rearranging, renaming, or deleting them. (→p.52, 148)

27 MARK key

This key allows you to register a specific time location in a song as a mark, so that it can be instantly recalled. Up to 100 such marks can be stored per song This key is also used to edit marks by renaming or deleting them etc. (→p.39, 148)

28 SCRUB key

Access the Scrub page. Use the **value dial** to control the selected function. (→p.40, 148)

29 LOC1/IN, LOC2/OUT, ...LOC6 key

These keys are used to register a specific time location within a song, or to instantly jump to a registered time location.
The time locations registered here can be used as the punch-in/out locations, and to specify the editing range for track editing operations such as copy or delete. (→p.38, 149)

30 MARK JUMP ◄ ► keys

Use these keys to step through the time locations registered as marks.

31 REC/PLAY MODE key

Use this key to select the recording mode, and also to turn loop playback on/off.

32 LOOP, TRIGGER, AUTO PUNCH indicators

These indicators will light to show which operation - loop record/playback, trigger recording, or auto punch recording - was selected using the **REC/PLAY MODE** key above.

33 Transport keys

Use the **REC**, **PLAY**, **STOP**, **REW**, and **FF** keys to perform playback or recording operations on the recorder. (→p.151)

34 HDD/CD access and MIDI indicators

The HDD/CD indicator will light to indicate that the hard drive is being accessed for recording, playback or editing, or when the CD-R/RW drive is operating. The MIDI indicator will light when MIDI messages are received from the **MIDI IN** connector.

Never subject the D32XD/D16XD to vibration or impact while this HDD/CD indicator is lit.

35 ON key, standby indicator

This key switches the D32XD/D16XD between the ON and STANDBY modes. When the standby indicator is lit, pressing the **ON** key will turn the D32XD/D16XD on.
When the D32XD/D16XD is operating, hold down the **ON** key to access the **Power Off** dialog box.

36 Cursor key

These keys move the cursor allowing you to highlight or select items in the display.

37 +, – keys

These keys edit the value of the selected parameter as an alternative to using the **value dial**. These keys are convenient when you want to adjust a value in single increments.

38 Value dial

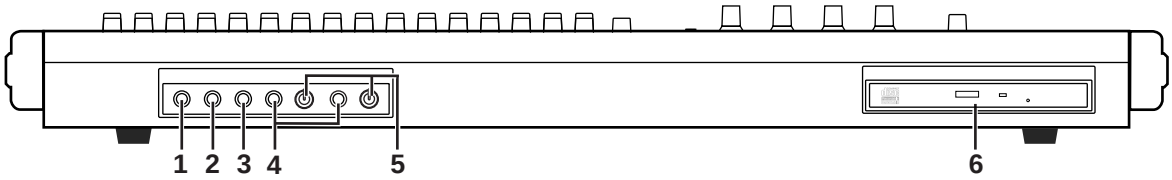
Use this dial to edit the value of the selected parameter or to change the current time location. When the Scrub page is displayed, rotating this **dial** will

play back the track at the corresponding speed (up to a maximum of double speed).

39 ENTER key

Use this key to finalize a parameter setting or to switch a parameter on/off.

Front panel



1 GUITAR IN jack

You can plug a guitar or bass into this jack. The GUITAR IN jack shares the same audio path as the INPUT 1 jack; if both jacks are connected to an audio source, the GUITAR IN jack will take priority.
This is an unbalanced 1/4" phone jack with 1 MΩ input impedance.

2 EXPRESSION PEDAL jack

You can use a pedal to control a specified parameter of an insert effect. You can control the parameter in realtime while you play or record. (→p.59)
Connect an expression pedal (separately sold option, EXP-2, XVP-10 etc.) to this jack.

3 FOOT SW jack

When your hands are busy playing an instrument, you can use a foot switch to control basic operations of the D32XD/D16XD recorder.
A foot switch can be used to start/stop the playback, start/end manual punch-in recording, register a mark, or to record tap tempo. (→p.27, 64, 66, 126)
Connect a foot switch (optional PS-1) to this jack.

4 PHONES 1, 2 jack

A set of headphones can be connected to each of these jacks.
This is a 1/4" stereo phone jack.
The headphone output is the same signal as the **MONITOR OUT L/R** jacks.

5 VOLUME 1, 2 knob

This knob sets the volume level of the headphones. Turning the knob to the right will raise the volume; turning the knob to the left will lower the volume.

6 CD-R/RW drive

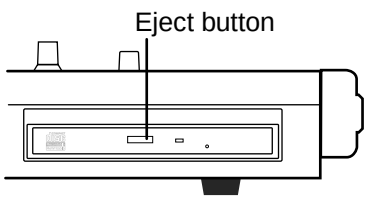
This drive can be used to backup and restore data, or to play or write audio CDs.

The CD-R/RW drive is a precision device. You must operate the D32XD/D16XD in a horizontal position, in a location that is not subject to vibration.

Inserting a disc

Make sure that the D32XD/D16XD is on.

(1) Press the eject button of the CD-R/RW drive to open the disc tray. The tray will open about halfway. Manually pull the tray out far enough to place a disc in the tray.



When opening the CD-R/RW drive for the first time, remove the pickup stopper from the disc tray before using the drive.

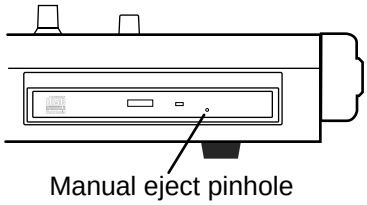
(2) Place the disc accurately in the tray, label side up.
(3) Push the disk tray in until it is completely closed.

Removing a disc

(1) Press the eject button to open the disc tray. The tray will open about halfway. Manually pull the tray out far enough to remove the disc from the tray.
(2) Gently remove the disc from the disc tray.
(3) Push the disc tray in until it is completely closed.

Emergency disc removal

Normally you will be able to remove the disc as described above. However, if this is not possible due to a power failure or other problem, you can also remove the disc as follows.

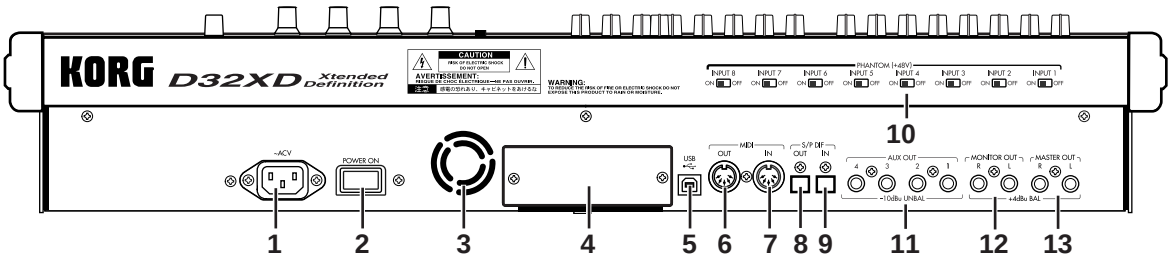


Insert a pin-like object of less than 1 mm diameter, such as a straightened paper clip, into the manual eject pinhole and push. The disc tray will be forced open.

Excessive use of this method may cause the CD-R/RW drives to malfunction.

This procedure must be performed with the power off.

Rear panel



1 AC connector

Connect the power supply cable (included) here.

2 Main power switch (POWER ON)

This turns the main power on/off.
When the Main power switch is turned on, the D32XD/D16XD will be in the standby mode. In the standby mode, pressing the **ON** key will turn the D32XD/D16XD on. While the D32XD/D16XD is operating, hold the **ON** key to access the **Power Off** dialog box and select **Yes** to shutdown the D32XD/D16XD and return to the standby mode. Then use the main power switch to turn the power off completely.

*To turn off the power, you must first press the **ON** key to perform the shutdown operation. Never turn off the Main power switch or disconnect the power cable until shutdown has been completed.*
If you turn off the Main power switch or disconnect the power cable before shutdown has been completed, data and user settings may be lost, and the hard disk may be damaged.

3 Cooling fan outlet

This is the outlet for the internal cooling fan. Do not block this outlet; doing so will cause heat to build up inside the D32XD/D16XD, causing malfunctions.

4 DIB-8 cover

Remove this cover when installing the optional ADAT I/O board (→p.178). For details on the parts and functions of the DIB-8's connectors, refer to "Parts of the DIB-8 and their functions" (→p.178).

5 USB connector

You can use a USB cable to connect the D32XD/D16XD to your computer.

USB peripheral devices such as external hard disks and CD-R/RW drives cannot be connected to the D32XD/D16XD.

6 MIDI OUT connector

MIDI messages are transmitted from this connector. Use this when you wish to use the D32XD/D16XD to control an external device via MIDI. (→p.93, 131)

7 MIDI IN connector

MIDI messages are received at this connector. Use this when you wish to control the D32XD/D16XD from an external MIDI device. (→p.93, 131)

8 S/P DIF OUT jack

This is an optical-type S/P DIF format (IEC60958, EIAJ CP-1201) digital output jack (stereo).
Use an optical cable to connect this jack to the optical digital input of your DAT, MD or other equipment.
This output provides the same audio as the **MASTER OUT L/R** jacks, but as a digital signal at the same sampling frequency and bit depth as the current song.

9 S/P DIF IN jack

This is an optical-type S/P DIF format (IEC60958, EIAJ CP-1201) digital input jack (stereo).
Use an optical cable to connect this jack to the optical digital output of your DAT, MD or other equipment.
This input provides a digital audio signal at the same sampling frequency and bit depth as the current song.

10 Phantom power switch

INPUT 1–8 jacks provide +48V phantom power so that condenser mics can be used. Phantom power is supplied to the balanced XLR jacks, and can be selected independently for each channel. Turn this switch on only for channels that use a condenser mic.

If a condenser mic is connected or disconnected with the phantom power switch on, damage to your equipment may occur. For this reason, always turn the phantom power switch off before connecting or disconnecting a condenser mic.

If the phantom power switch is on, you must never connect any device other than a condenser mic. Doing so may damage your equipment.

11 AUX OUT 1, 2, 3, 4 [*AUX OUT 1, 2] jacks

These jacks output the external send audio signals from the mixer channels (→p.47, 112). You can connect these to the input jacks of an external effect processor.
These are 1/4" unbalanced phone jack outputs.

12 MONITOR OUT L/R jacks

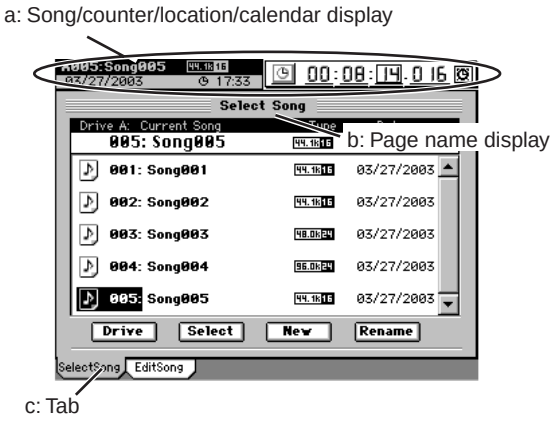
Connect these jacks to your external monitor system. In **MIXER**, **SOLO/MONITOR**, **"Monitor"** tab page (→p.50, 114) you can select the bus that will be monitored from these outputs. These jacks output the same audio as the **PHONES** jacks.
These are 1/4" balanced/unbalanced TRS phone jack outputs.

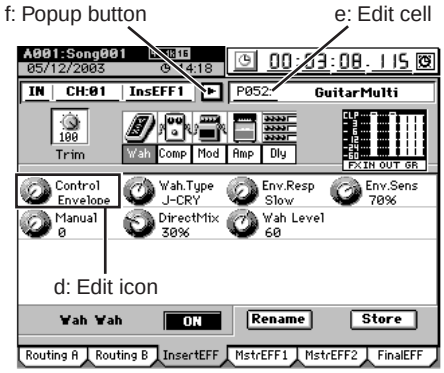
13 MASTER OUT L/R jacks

These jacks provide the analog audio signal from the master bus, or the audio signals selected by the **SOLO** function. You can select the solo source in **MIXER**, **SOLO/MONITOR**, **"Solo"** tab page.
Connect these jacks to your external monitor system or recording device.
These jacks provide an analog version of the audio being sent to the S/P DIF OUT jack.
These are 1/4" balanced/unbalanced TRS phone jack outputs.

Items and functions in the TouchView display

The D32XD/D16XD features Korg's TouchView LCD technology. By touching the buttons or icons displayed in the LCD screen, you can quickly and intuitively select pages, set parameter values, edit song names, save data, and perform many other operations.
References in this manual to "... button," "... tab," or "... icon" indicate items displayed in the LCD screen that can be selected using the TouchView display.
References to "... key," "... knob," "... dial," or "... slider" indicate controls on the top panel or front panel; use the corresponding physical controller to access these items.





a: Song/counter/location/calendar display

This area displays the currently selected song, the counter (song position), and the date.
This is displayed in any page mode, and you can modify the counter/calendar setting.

You cannot modify these settings while a dialog box is displayed.

b: Page name display

This indicates the name of the currently selected page, or editing information. This item does not appear in certain pages such as the effect pages or **"Mixer View."**

c: Tab

Press one of the tabs to select the corresponding page.

d: Edit icon

When you press an icon such as a fader or knob shown in the LCD screen, a frame will appear (in most cases) around the icon. This is called the edit icon; changes you make will apply to the parameter whose icon is enclosed by the frame.

e: Edit cell

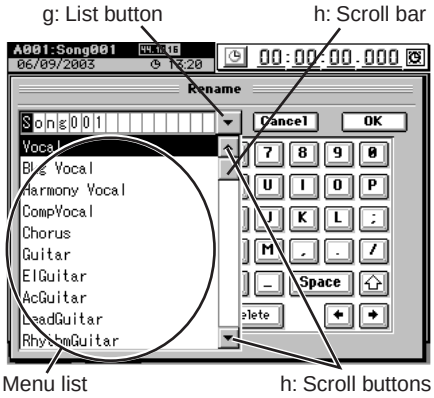
When you press a parameter in the LCD screen, the parameter value will be highlighted. This is called the edit cell; changes you make will apply to the highlighted area.

f: Popup button

When you press one of these buttons, a dialog box will appear, displaying parameters and values for you to select.
When you have finished selecting parameters or setting values, press the **Yes** (or **OK**) button or **No** (or **Cancel**) button in the dialog box to close it and to return to the previous tab page.

g: List button

When you press this button, a menu list will appear, allowing you to select an item from this list.



h: Scroll bar/scroll buttons

Use these to move up and down through a list of parameter values that extends beyond the window in the display.

i: Confirmation button

When you press this button, a dialog box will open, asking whether you are sure you want to execute the settings or the operation. Some dialog boxes may contain an edit cell for you to specify a value.

Press the **Yes** (or **OK**) button or the **No** (or **Cancel**) button in the dialog box to close the dialog box and return to the previous tab page.

j: Radio buttons

Use the radio buttons to chose one of the displayed items.

k: Toggle button

This type of button will either change function or toggle between on/off each time you press it.

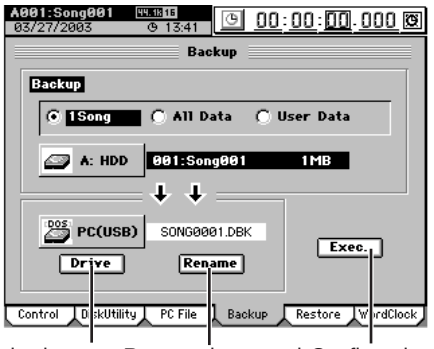
l: Check box

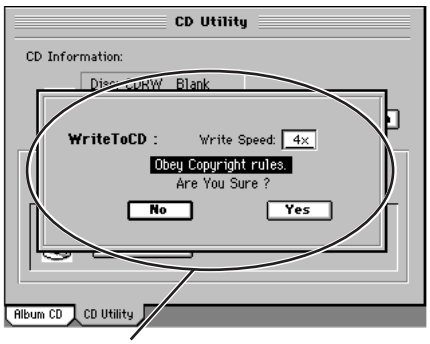
Each time you press one of the check boxes, a check mark will either be added or removed. Add a check mark if you want to enable that function.

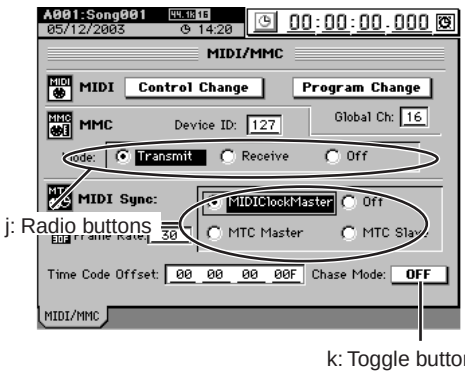
* Other

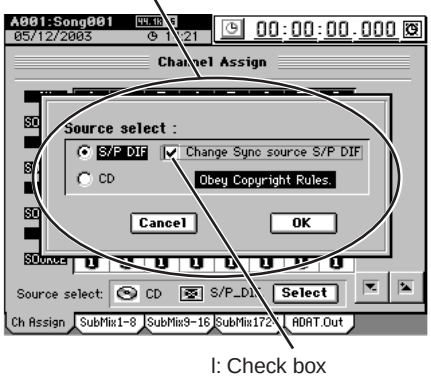
In addition to the items listed above, the **Drive** button will open a dialog box where you can select a drive for editing, and the **Rename** button will open a dialog box where you can rename a song or program.

There are also certain screens, such as the routing confirmation screen, that provide valuable information, but contain no editable items.









Basic operation

1. Selecting the page mode

In order to access a particular function by using the TouchView screen, you first need to select the page mode that contains that function, using the page mode keys.
The **MIXER** key and **CD** key will display a page jump menu in the LCD screen; use the page mode buttons shown in the LCD screen to select the desired mode. Each time you press the **MIXER** key or **CD** key, you will return to this page jump menu.

note *For details on the functions of each page mode, refer to "Reference" (→p.96–).*

2. Selecting a tab page

Each page mode contains numerous parameters, and these are organized into pages. The pages are divided by tabs. To select a tab page, press one of the tabs in the LCD screen. You can also hold down the **cursor** (▼) key and use the **LOC1/IN...LOC6** keys to select a tab.
Some page modes contain only one tab.

3. Selecting and setting parameters

Selecting a parameter

To select a parameter, press the edit icon, edit cell, or button shown in the LCD screen.
In most cases, you can use the **cursor** keys to move between parameters and press the **ENTER** key to select one.

*You cannot use the **cursor** keys to move between a dialog box and the original tab page.*

Setting a parameter

There are different methods of setting a parameter, depending on the type of parameter.

○ Edit icons, edit cells, buttons

- Press the edit icon, edit cell, or button in the LCD screen to highlight it, and then turn the **value dial** (or use the **+/–** keys) to set the value. If ▼/▲ buttons are displayed in the LCD screen, you can use these buttons as well.

○ Popup buttons, dialog boxes

- Press the popup button in the LCD screen to access the dialog box, and then select the parameter value in the LCD screen. You can also use the **value dial** (or **+/–** keys) to select the parameter value.

○ Toggle buttons

- Toggle buttons in the LCD screen will alternate between on and off each time you press them. You can also use the **cursor** keys to highlight the button and then press the **ENTER** key to switch the function on and off.

○ Radio buttons

- Press a button in the LCD screen to select it. In addition, you can use the **cursor** keys to highlight the button and then press the **ENTER** key to select it.

○ Selecting one item from a menu list

- Press the desired item from the list shown in the LCD screen to select it.
- Use the ▼/▲ buttons in the LCD screen to select the desired item.
- Use the **value dial** or **+/–** keys to make your selection.

Fader or pan settings

D32XD

When faders are shown in the LCD screen, moving a fader will automatically select and update the value of the corresponding on-screen control. In addition, you can select a particular fader or pan knob in the display by using the cursor keys. In either case, you can then use the **value dial** (or the **+/–** keys) to edit the value. To set the pan, press a **CH SELECT** key to select a channel and use the pan knob located at the lower right of the LCD.

D16XD

When faders or pan knobs are shown in the LCD screen, moving a fader or pan knob will automatically select and update the value of the corresponding on-screen control. In addition, you can select a particular fader or pan knob in the display by using the cursor keys. In either case, you can then use the **value dial** (or the **+/–** keys) to edit the value.

Send and equalizer

As soon as you change the value of one of the send or equalizer knobs, or select one of the send or equalizer keys, the LCD screen will automatically call-up the appropriate tab page for editing the corresponding parameter.
As you continue to use these knobs and keys, you can see as the values are updated in the display.

Effect settings

When effect parameter knobs are displayed in the LCD screen, you can use the four **CONTROL** knobs to select parameters or edit values. If more than four editable effect parameters are displayed at one time, use the cursor keys to select the row of knobs that contains the parameter you wish to edit.

Selecting channels

You can quickly select a channel by using the **CH SELECT** keys above the faders.

Examples of operation

Figure 1 shows the **EFFECT**, **"MasterEFF1"** tab page.
To select this tab page, press the top panel **EFFECT** key, and then press the **"MasterEFF1"** tab in the LCD screen.

The upper row of knob icons in this screen are linked with the **control knobs** below. Turning a **control knob** will directly modify the corresponding value. To select a knob in the lower row of icons, you can either use the cursor keys, or simply touch one of the knob icons in the LCD screen.

Figure 1

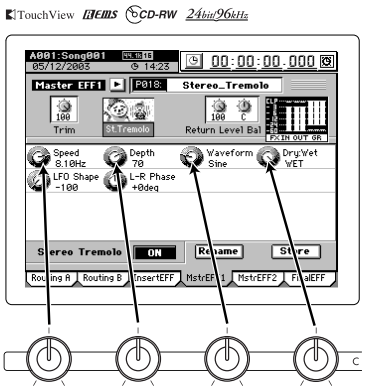


Figure 2 shows the **MIXER**, **FADER/PAN/AUTOMATION**, **"Fader Pan"** tab page.
To select this tab page, press the top panel **MIXER** key, and then press the **FADER/PAN/AUTOMATION** button in the page jump menu that appears in the LCD screen. If a different tab page (such as EditScene or SceneFilter) is displayed, press the **"Fader Pan"** tab.

As you move any of the faders or pan knobs, this screen will automatically show which parameter you are changing, and its new value.

Figure 2

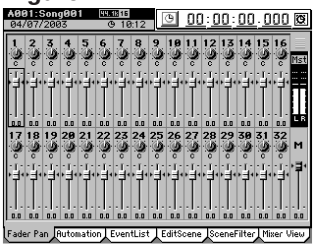
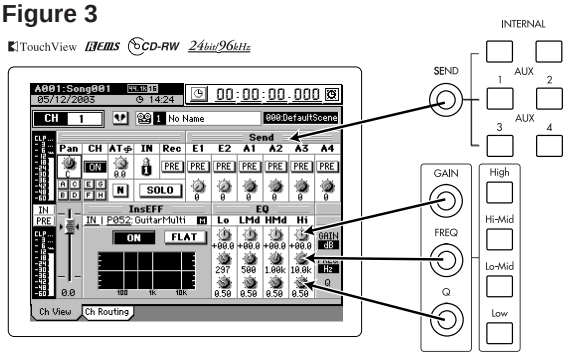


Figure 3 shows the **CH VIEW**, **"Ch View"** tab page.
To select this tab page, press the top panel **CH VIEW** key. If a different tab page (Ch Routing) is selected, press the **"Ch View"** tab.

In this screen, you can adjust the fader and pan settings of the selected channel. The fader and pan knob can be selected using the cursor keys or by touching their icons in the LCD display, and then using the **value dial** or **+/–** keys to set the value. You can also simply move the fader or pan knob for the selected channel and see the value as it is updated in the display. Use the **CH SELECT** keys to select the current channel shown in the display. You can also use the knobs and keys located at the right of the LCD screen to adjust the Send and EQ settings.

Figure 3



Quick Start

This Quick Start is designed to provide a few examples of some common tasks, while helping you get familiar with the operations of the D32XD/D16XD.

Step 1: Preparations

The first step explains how to connect your monitor speakers or headphones, how to turn the D32XD/D16XD on, and how to listen to the demo songs.

Step 2: Quick recording

This step will cover how to connect a guitar, keyboard, or mic to the D32XD/D16XD, how to record your performance on to a track, and how to play back the recording and listen to the results.

Step 3: Overdubbing

Overdubbing allows you to record additional tracks as you play along with the performance you recorded in step 2.

Step 4: Mixdown and mastering

In this step you can apply effects and EQ to each track to adjust the overall balance.

Finally, you can apply effects and EQ to the entire song to add overall compression and tonal adjustments, and mix your song down to the stereo master track.

Step 1: Preparations

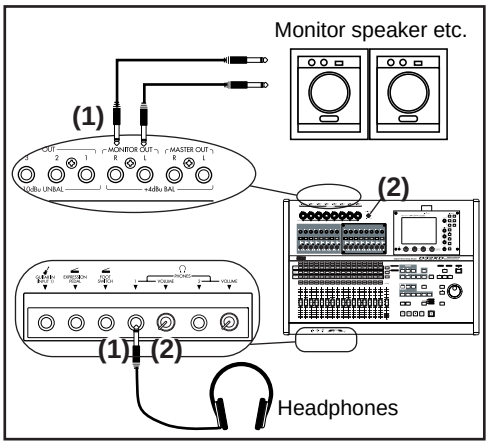
1. Connections

Please note the following items before you begin.

The D32XD/D16XD automatically stores the date and time each time a song is saved, so that you can tell when a song was updated. Before you begin, we recommend that you set the date and time (→p.2 "Setting the calendar").

The D32XD/D16XD was designed to make use of Korg's TouchView graphical interface for quick and intuitive operation.

If you have any questions about how to use the TouchView display, refer to "Items and functions in the TouchView display" (→p.15).



Connections

(1) Connect the MONITOR OUT L/R jacks to your monitor speaker system, or connect a set of headphones to the PHONES 1 jack.

(2) Set the MONITOR LEVEL knob to –∞. If you are using headphones, set the headphone VOLUME knob 1 all the way to the left.

2. Turn the D32XD/D16XD on

Connect the AC power cable (included), and turn on the power.

Be sure to use the procedure described in "1 Power-on" (→p.1).

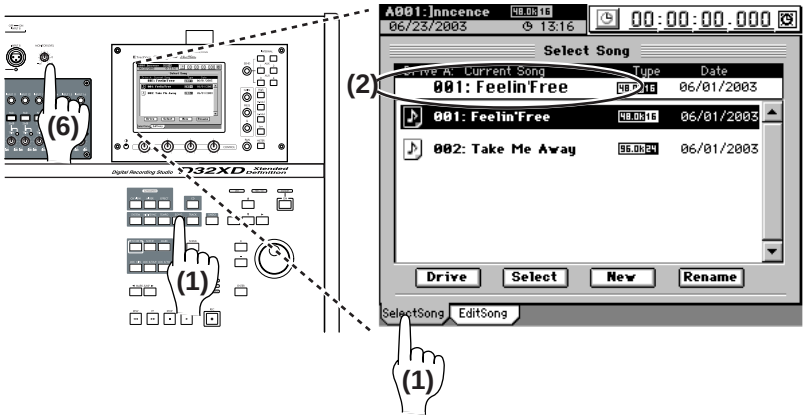
Use an independent AC outlet whenever possible. If a circuit breaker should trip for some reason, any unsaved data will be lost and the internal hard drive or CD-R/RW may be damaged.

3. Listen to the demo song

When it ships from the factory, the D32XD/D16XD contains pre-recorded demo songs. This section explains how to listen to one of the demo songs.

(1) Press the SONG key.
If a tab page other than **"Select Song"** is displayed, press the **"SelectSong"** tab.

(2) The top line indicates [Drive A] Current Song:, and the currently selected demo song is shown below it.
If you want to select a different demo song, refer to "1-3. Selecting a song" (→p.37).



(3) Verify that the CH ON indicator is lit, and the CH ON keys of channels 1 through 16 are all on.
On the D32XD, press the **1–16/17–32** key to verify that the faders and keys are assigned to 1–16.

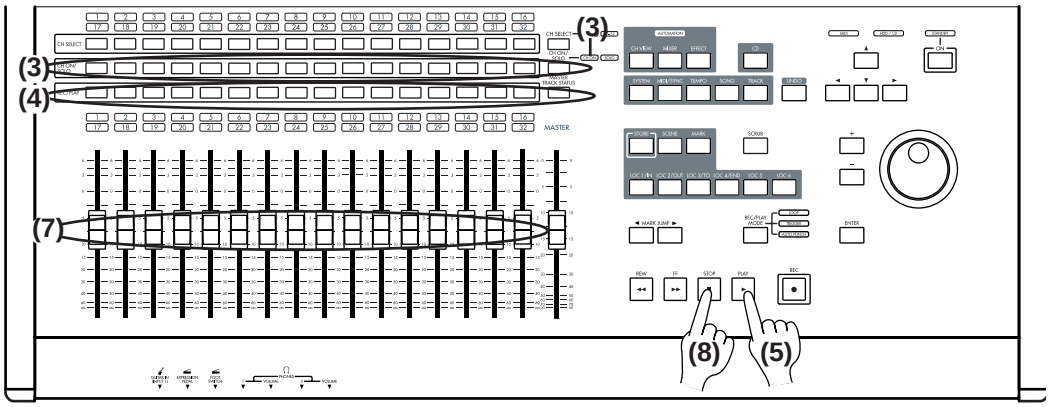
(4) Verify that the REC/PLAY keys of channel tracks 1 through 16 are set to PLAY (key lit green).
If any of the keys are set to REC (lit red), press those keys to select PLAY (lit green). If the **MASTER TRACK STATUS** key is lit, press it until the key goes dark.

(5) Press the PLAY key to start playing the demo song.

(6) Set the red MASTER fader to the "0" setting. Slowly turn the MONITOR LEVEL knob toward the right to adjust the playback volume.
If you have connected headphones, turn both the **MONITOR LEVEL** knob 1 and the **VOLUME** knob slowly toward the right to adjust the volume.

(7) While the song plays, operate the channel faders and notice that the balance of the sound changes.

(8) When the demo song ends, press the STOP key.
Hold down the **STOP** key and press the **◄MARK JUMP** key to return to the beginning of the song (→p.38 "2. Location").



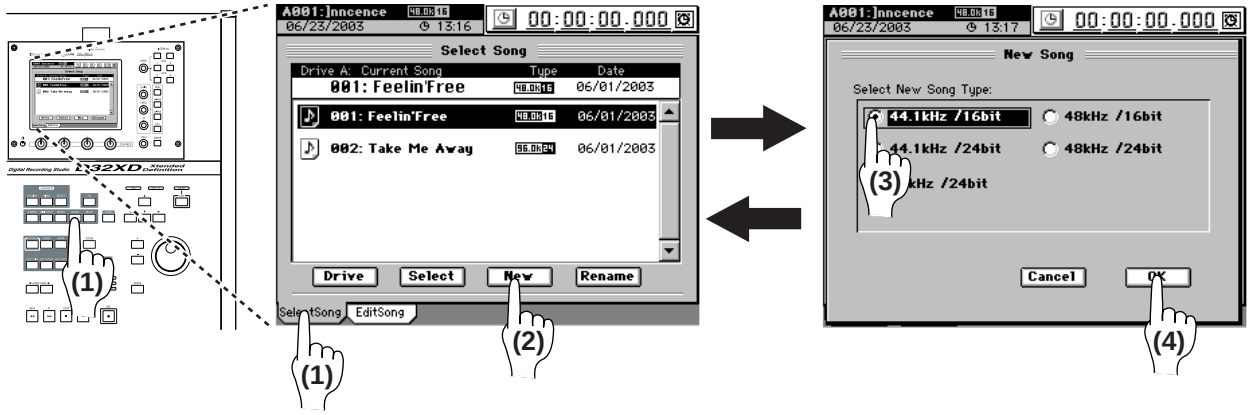
Step 2: Quick recording

1. Create a new song

In order to begin recording, you must first create a new song.

(1) Press the SONG key to access the "SelectSong" tab page.

(2) Press the New button. The New Song dialog box will appear.



(3) In the "Select New Song Type" area, select the desired sampling frequency and bit depth for the song that you want to create.
For this example, select 44.1 kHz/16 bit.

(4) Click the OK button in the screen.
A new song named **"Song□□□"*** will be created following the last existing song.
* "□□□" will be a consecutive number starting from 001.

note *You can change the location (song drive) in which the song is created (→p.37 "Selecting a song from another song drive").*

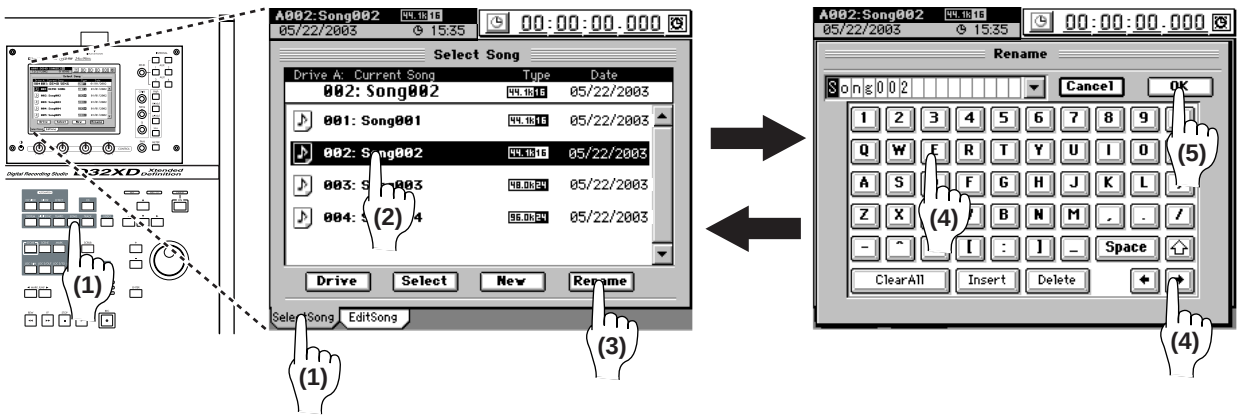
2. Name the song

Here's how to rename the newly created song.
Before you start recording, we recommend that you give your song a name that will help you recognize the content of the song.

(1) Press the SONG key to access the "SelectSong" tab page.
If the **"EditSong"** tab page is displayed, press the **"SelectSong"** tab.

(2) Press the newly created song to select it; the song will be highlighted.

(3) Press the Rename button to display the Rename dialog box.



(4) Edit the song name.
When you press a character or numeral button, the highlighted character in the song name will change.

The highlighted area will then move one step toward the right. Repeat this step to edit the song name.
If you want to edit only a portion of the song name, use the ◄ ► buttons to move the highlighted area, and then press a character or numeral button.

Use the buttons in the LCD screen to perform the following operations.

"0...9": Input a numeral (e.g., "0")

"A...@_...": Input an alphabetical character (e.g., "A") or symbol (e.g., @, _).

Space: Input a space.

⇧: Switch the alphabet buttons between lower case and upper case.

Insert: Insert a space, and move the subsequent characters backward.

Delete: Delete the character at the cursor location.

ClearAll: Erase the entire name.

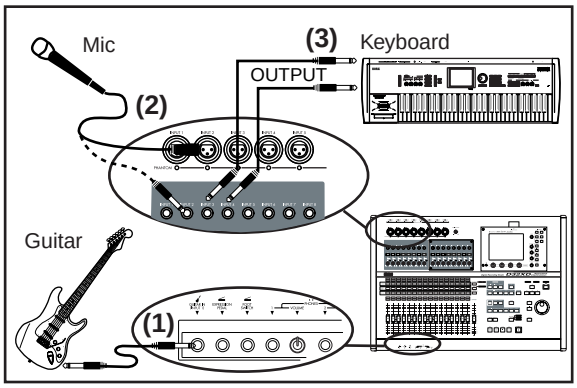
(5) Confirm the changes.
When you have finished naming your song, press the **OK** button in the LCD screen.
If you decide not to change the name, press the **Cancel** button.

note *As an alternative to the above procedure, you can use the Name Library to change the name. Refer to "Using the name library" (→p.37).*

3. Connect your audio sources to the mixer inputs

Connect devices to the INPUT jacks

This example shows how to connect a guitar, mic, and keyboard to the mixer inputs.



(1) Set the INPUT 1 TRIM knob to the "–12" position, and connect a guitar to the GUITAR IN jack.
The GUITAR IN jack is shared with INPUT 1, and the two cannot be used simultaneously (→p.12 "1 GUITAR IN jack").

(2) Set the INPUT 2 TRIM knob to the "–12" position, and connect a mic to the INPUT 2 jack.

(3) Set the INPUT 3 and 4 TRIM knobs to the "–12" position, and connect the output of a keyboard to INPUT jacks 3 and 4.

Assign the inputs to channels

First, specify which channel will be assigned to the guitar input.

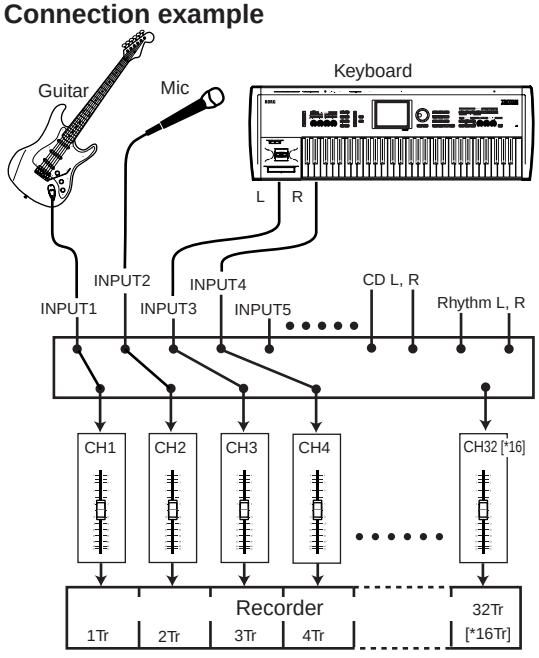
(1) Press the MIXER key, and then press the page jump menu INPUT/OUTPUT/CH ASSIGN button to access the "Ch Assign" tab page.

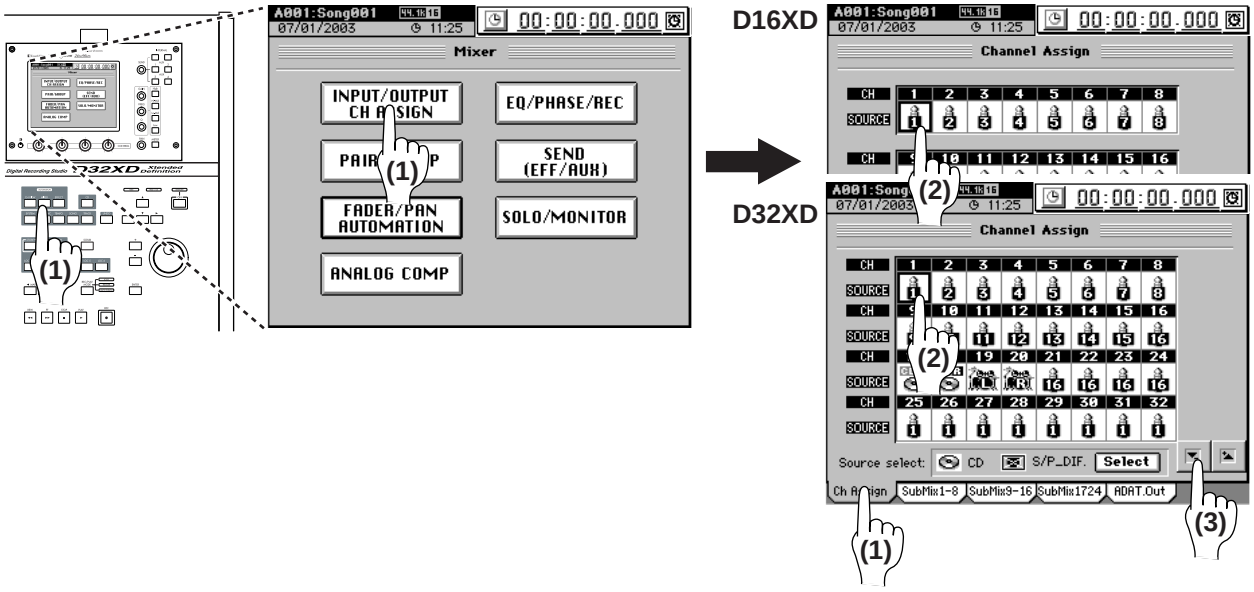
(2) In the tab page, press the CH1 SOURCE channel icon. The icon will be enclosed by a frame.

(3) Use the ▼- / ▲+ buttons to set the number inside the channel icon to read "1" (INPUT 1).
You can also use the **value dial** or the **+/–** keys to change the number within the icon.

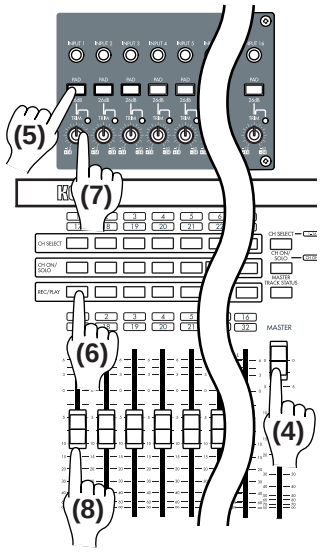
note *If you set the CH1 SOURCE number to "2," INPUT2 (in the diagram at right, the mic) will be assigned to CH1.*

Connection example





Adjust the CH 1 input level to verify that the sound of the guitar has been assigned.



(4) Raise the MASTER fader to the "0" position, and lower the CH1 fader to "–∞."

(5) For a mic or guitar, leave the PAD key unpressed when making your settings. For a line-level output, such as from a keyboard, press the PAD key to the in position (on) when making your settings.

(6) Set the CH1 REC/PLAY key to REC (key lit red).

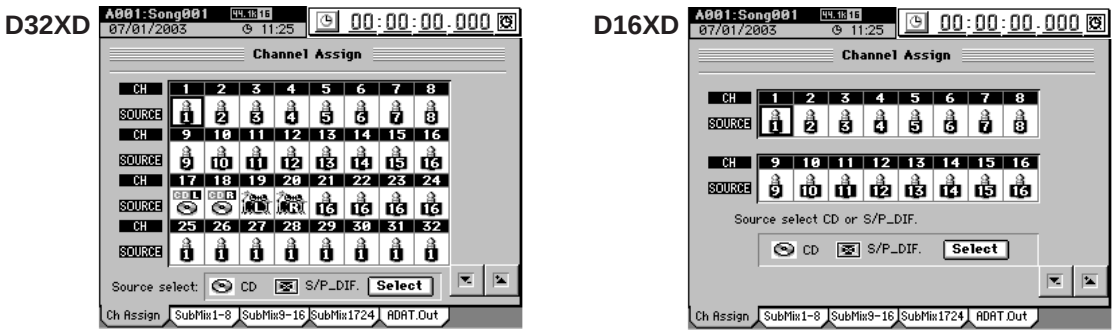
(7) When you play your guitar, the INPUT 1 peak indicator (the LED at the upper right of TRIM) will light.
Adjust the **TRIM** knob so that the loudest input level does not cause the LED to light red.

(8) Gradually raise the CH1 fader while playing your guitar, and you will hear sound from your monitor speakers.
If you are using headphones, adjust the PHONES 1 **VOLUME** knob and the **MONITOR LEVEL** knob.

Using the same method, you can assign the mic and keyboard inputs to their own channels.

(9) Change the number displayed inside the CH2 SOURCE channel icon to "2" (INPUT 2).
Using this setting, the sound of the mic connected to INPUT 2 will be sent to CH2. Set and check the mic level as described in steps (4)–(8).

(10) Change the number within the CH3 SOURCE channel icon to "3" (INPUT 3), and the number within the CH4 SOURCE channel icon to "4" (INPUT 4).
Using these settings, the sound of the keyboard connected to INPUT 3 and 4 will be assigned to CH 3 and 4. Set the pan knob of channel 3 all the way to the left; set the pan knob of channel 4 all the way to the right. Now you can monitor your keyboard in stereo.
Check the keyboard sound and set the level as described in steps (4)–(8).



4. Effects and EQ (equalizer)

If you want to record the sound of the connected devices without any further processing, proceed to "5. Recording." If you want to use the D32XD/D16XD's internal effects and 4-band parametric EQ to process the sound before it is recorded, read the following sections "Applying effects to the input sound" and "Adjusting the EQ."

Applying effects to the input sound

note *It's also easy to apply the D32XD/D16XD's effects after recording the sound (→p.29).*

Here's how to apply effects to the input from your guitar.

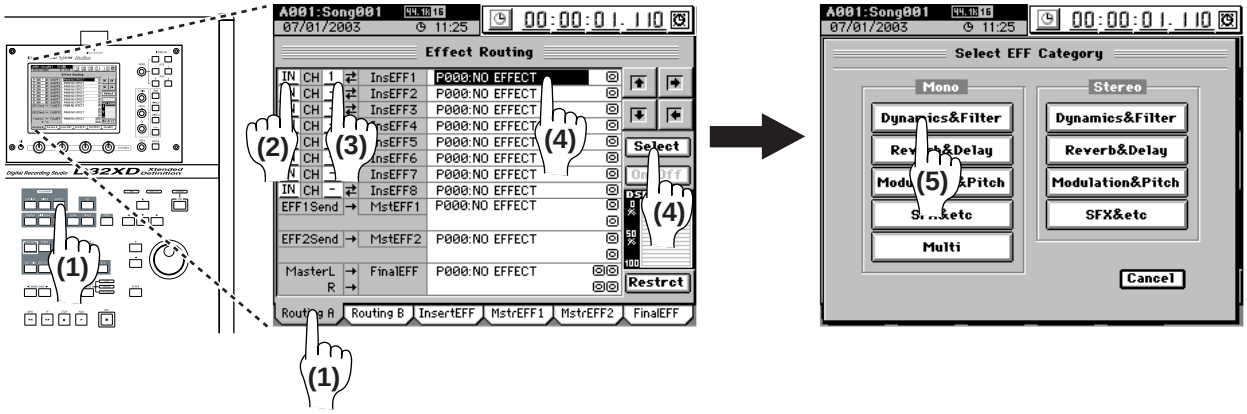
(1) Press the EFFECT key and select the "Routing A [*EFFRouting]" tab page.

(2) Press the InsEFF1 IN/TR cell (it will become highlighted) and use the +/– keys to select "IN."
IN stands for Input, and **TR** stands for Track; choose **IN** if you want to apply the effect to the input sound, or **TR** if you want to apply the effect to the playback.

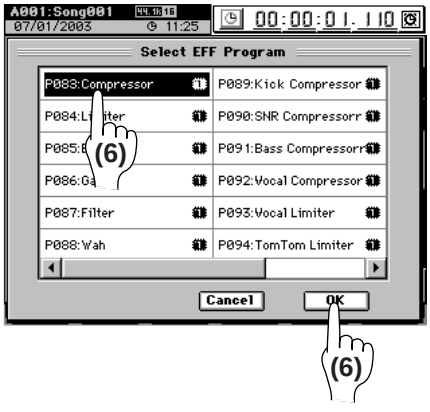
(3) Press the InsEFF1 CH cell (highlighted) and use the +/– keys to select "1."

(4) Press the InsEFF1 edit cell (highlighted). Then press the Select button.

(5) The Select Effect Category dialog box will appear. Here you can select what type of effect you want to use on the guitar.
For this example, select **"Dynamics&Filter"** from the **"Mono"** category.



(6) The Select EFF Program dialog box will appear. Here you can select the effect.
For this example press **"Compressor"** and then press the **OK** button.

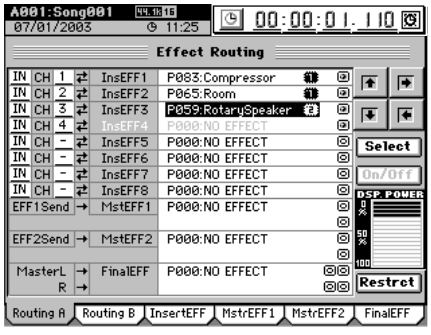


With this setting, **"Compressor"** can be applied as insert effect 1 to the sound from input 1.

You can apply effects to the mic and keyboard inputs in the same way.

(7) Set InsEFF2 to IN, and CH to 2.
For the **InsEFF2** edit cell, select the **"Room"** effect from **"Reverb&Delay"** in the **"Mono"** category.

(8) Set InsEFF3 to IN and CH to 3, and set InsEFF4 to IN and CH to 4.
For the **InsEFF3** edit cell, select the **"Rotary Speaker"** effect from **"SFX&etc"** in the **"Stereo"** category.
Because this is a stereo effect, the same effect will automatically be selected for InsEFF4. (→p.56 "Effects")



For details on editing the parameters of the effects you selected, refer to "4. Editing the effects" (→p.59).

Applying EQ to the input sound

note *On the D32XD/D16XD it's also easy to apply EQ after recording.*

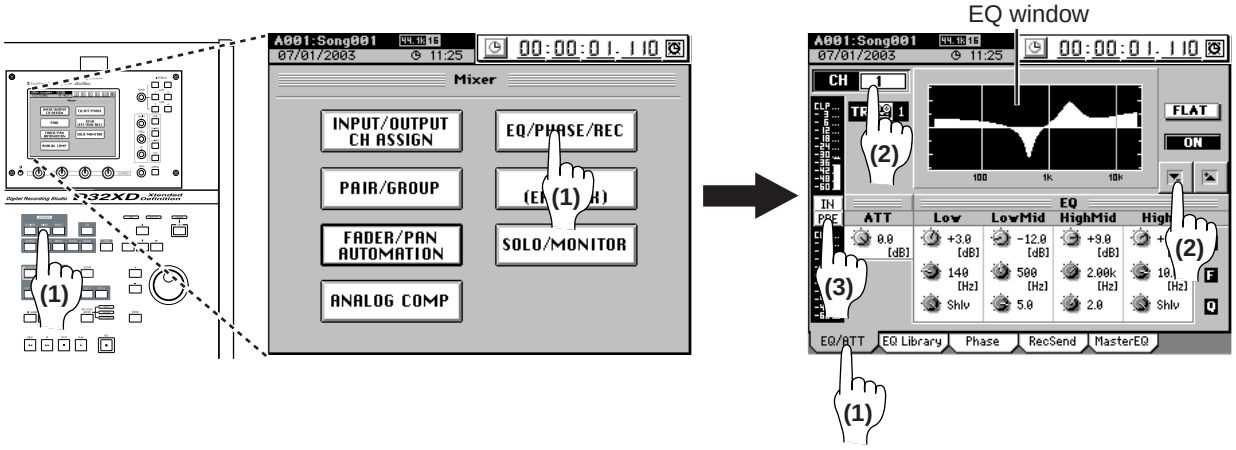
Here's how to apply EQ to the input from your guitar.

(1) Press the MIXER key. In the page jump menu, press the EQ/PHASE/REC [*EQ/ATT/PHASE] button and then select the "EQ/ATT" tab page.

note *You can move from another tab page or page mode directly to the "**EQ/ATT**" tab page by turning one of the **EQ** knobs or pressing one of the **EQ** keys (High, Hi-Mid, Lo-Mid, Low) located at the right of the LCD screen.*

(2) Press the CH cell, and use the ▼- / ▲+ buttons to select a channel (in this example, 1).

You can also select a channel by pressing one of the **CH SELECT** keys.



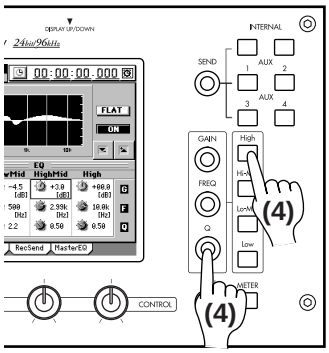
(3) Press the level meter position cell and set it to read IN/PRE.

IN stands for Input and PRE stands for pre-fader; these settings allow you to simultaneously check the input signal level, and the level of the signal immediately after the EQ has been applied.

(4) While playing your instrument, use the EQ knobs and keys located at the right of the LCD screen to adjust the EQ.

Press an **EQ** key to select the frequency band that you want to adjust (High, Hi-Mid, Lo-Mid, Low), and use the **EQ** knobs to adjust the gain, center frequency and Q (resonance/bandwidth).

The resulting EQ curve will be displayed in the EQ window.



✍ *If the level meter clips, press the **ATT** knob icon in the LCD screen and adjust it to a value that does not cause clipping.*

Using the same method, you can apply EQ to the mic and keyboard inputs as well.

(5) Press the CH cell and use the ▼- / ▲+ buttons to select a channel (in this example, 2).

Now you can apply EQ to the sound from the mic connected to INPUT 2. Adjust the EQ as described in steps (3) and (4).

(6) Press the CH cell and use the ▼- / ▲+ buttons to select a channel (in this example, 3).

Now you can apply EQ to the stereo keyboard connected to INPUT 3. Adjust the EQ as described in steps (3) and (4).

If you pair the two keyboard channels, the EQ settings you make will also be applied to the sound of input 4 without your having to perform step (7), below (→p.49 "3-5. Pairing").

(7) Press the CH cell and use the ▼- / ▲+ buttons to select a channel (in this example, 4).

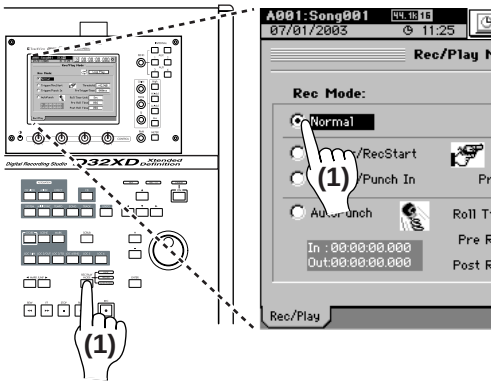
Now you can apply EQ to the stereo keyboard connected to INPUT 4. Adjust the EQ as described in steps (3) and (4).

✍ *If you paired the two keyboard channels in step (6), you will not be able to adjust the EQ for channel 4. The EQ settings of channel 3 will also apply to channel 4.*

5. Recording

You are now ready to record one of the sources (guitar, mic, keyboard) that you set up to record in the previous steps. In this example, let's record the guitar.

Preparations for recording

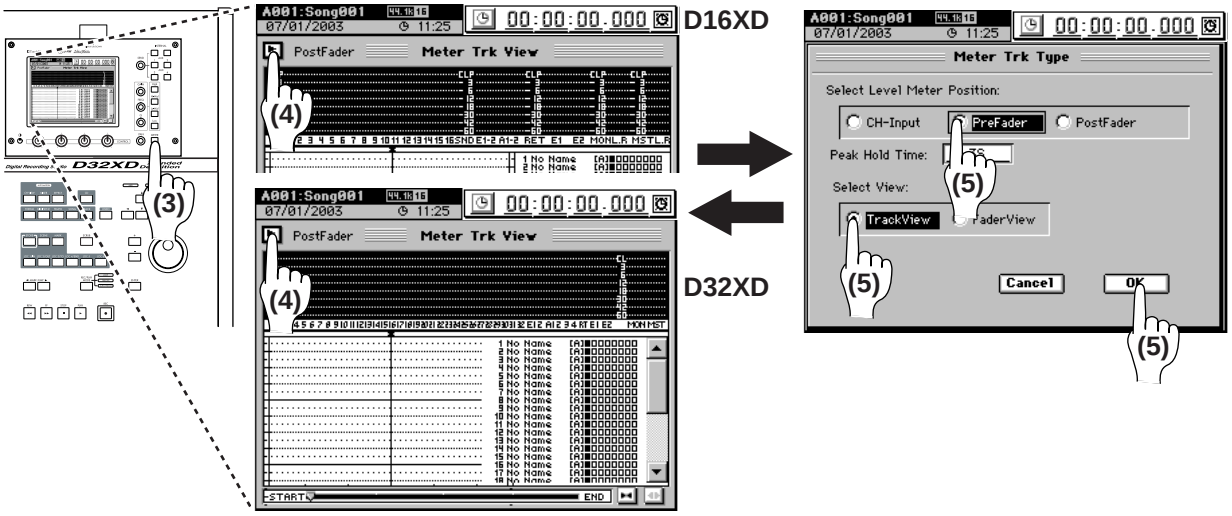


(1) Set the recording mode.
Press the **REC/PLAY MODE** key. In the **"Rec/Play"** tab page, set **Rec Mode** to **"Normal."**

(2) Set the RecSend.
Press the **MIXER** key. Then press the page menu command **SEND (EFF/AUX [*/REC])** button, and in the **"RecSend"** tab page make sure that the channel (in this example, 1) that you want to record is set to PRE. If it is set to PST, press that button to change it to PRE.

(3) Access the track view screen so you can see the recording track status.
Press the **METER** key to display the level meter screen.

(4) Press the popup button in the screen to display the Meter Trk Type dialog box.

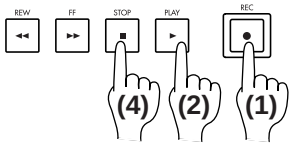


(5) Choose "PreFader" as the Select Level Meter Position setting, and choose "Track View" as the Select View setting. Then press the OK button.

(6) Press the REC/PLAY key of the track you want to record, setting it to REC (key lit red).

Start recording

The location currently shown in the counter is where the recording will begin.



(1) Press the REC key to enter record-ready condition (the key will blink).

(2) Press the PLAY key to start recording (REC and PLAY keys will light).

(3) Begin playing your instrument.

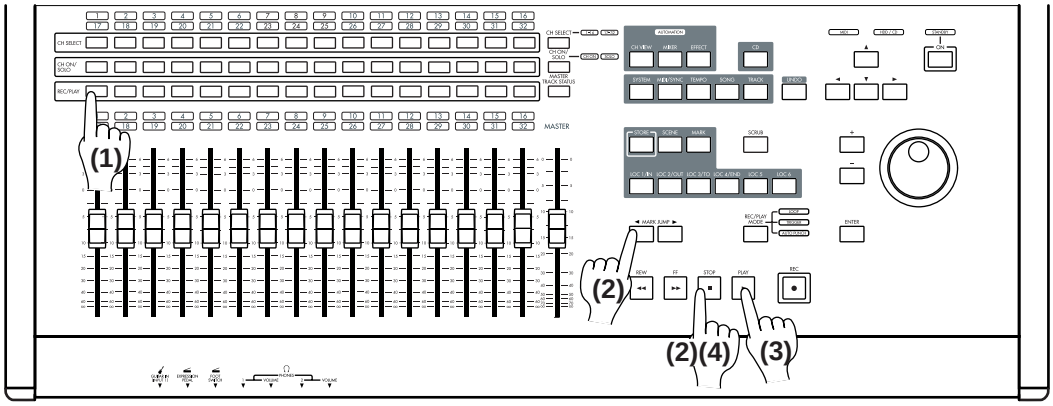
(4) When you have finished playing your instrument, press the STOP key to stop recording (the keys will go dark).

The track view will display a bold line to indicate the region where recording took place. This line indicates the event data. Event data is displayed even for recorded areas where you did not actually play your instrument.

6. Playback

(1) Press the REC/PLAY key of the track 1 you recorded, setting it to PLAY (key lit green).

(2) Return to the beginning of the song.
Hold down the **STOP** key and press the **MARK JUMP** (◀) key to return to the beginning of the song (→p.38 "2. Location").



(3) Press the PLAY key to begin playback (the key will light).

- You can apply EQ to the playback audio (→p.49 "Applying EQ to the playback").
- You can adjust the level and pan of the playback audio (→p.48 "3-1. Adjusting the volume," →p.48 "3-2. Adjusting the pan").
- You can apply effects to the playback audio (→p.56 "Effects").
- You can play internal rhythms along with the playback (→p.61 "Rhythm").

(4) Press the STOP key to stop the playback (the PLAY key goes dark).

note *Even if there is no event data, playback will not stop until you press the **STOP** key.*

note *You can use a PS-1 foot switch (sold separately) to start/stop playback (→p.126).*

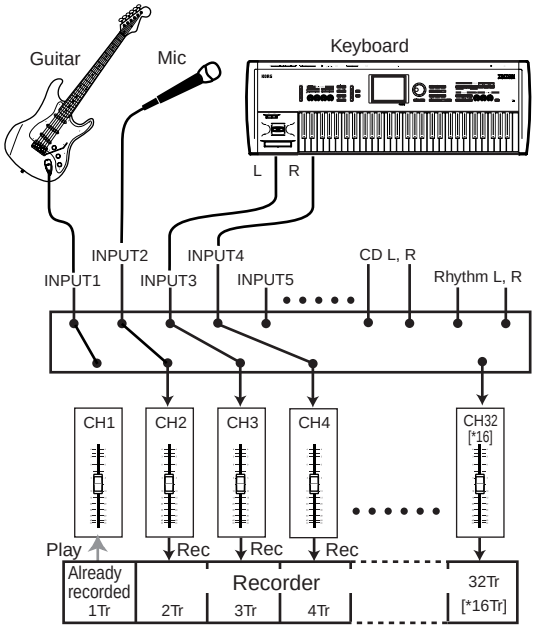
Step 3: Overdubbing

In this step, you can record the output from your mic or keyboard on a new track while listening to the guitar performance that you recorded in Step 2.

1. Recording

For this example, you will be able to listen to the guitar performance while you record the mic input on track 2.

Connection example



Preparations for recording

(1) Press the REC/PLAY key of the track (2) you want to record, setting it to REC (key lit red).

(2) Press the REC/PLAY key of the track (1) that you want to hear playback, setting it to PLAY (key lit green).

(3) Move to the location in the song where you want to start recording (→p.38).

Start recording

(1) Press the REC key to enter record-ready condition (the key will blink).

(2) Press the PLAY key to start recording (REC and PLAY keys will light).

note *You can use a PS-1 foot switch (sold separately) to start/stop recording (→p.126).*

(3) While listening to the playback, record an additional part.

(4) When you have finished performing, press the STOP key to stop recording (the key will go dark).

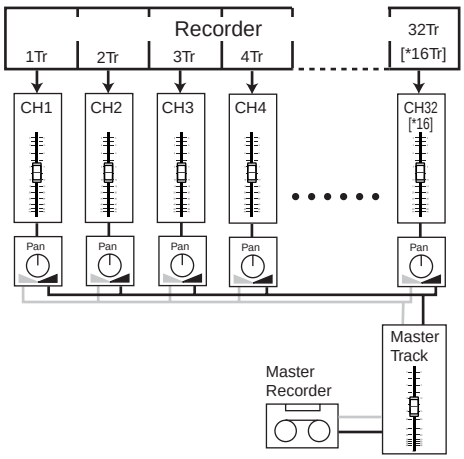
2. Playback

Play back the song to verify that your performance was recorded correctly.

(1) Follow steps (1)–(4) of "6. Playback" in the previous section "Step 2: Quick recording."

Step 4: Mixdown and mastering

"Mixdown" refers to the process of applying insert effects, master effects, and EQ to the recorded tracks, adjusting the overall balance, and then combining everything into a two-track stereo mix.
Once you have mixed-down a song, you can apply a final effect and EQ to add compression and adjust the overall tone to create a finished master; this process is called "mastering."
On the D32XD/D16XD, you can perform the mastering and the stereo mix-down at the same time.



1. Applying effects and EQ to individual channels

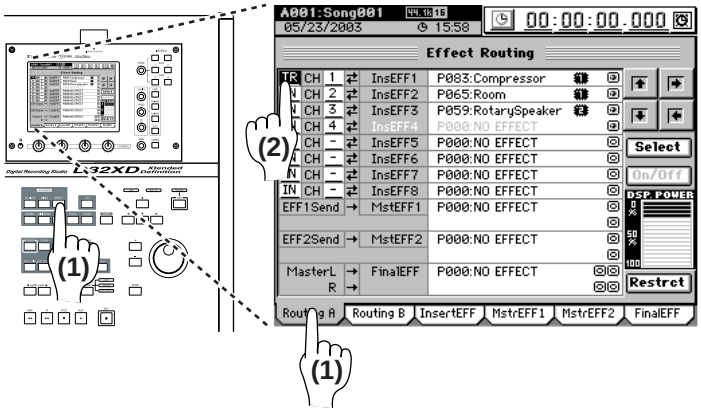
Applying effects to individual channels/tracks (Insert Effect)

You can apply an effect to the playback of an individual track by assigning an insert effect to that mixer channel.

(1) Press the EFFECT key and select the "Routing A [*EFFRouting]" tab page.

(2) Press the IN/TR cell (it will become highlighted), and use the +/– keys to select "TR."

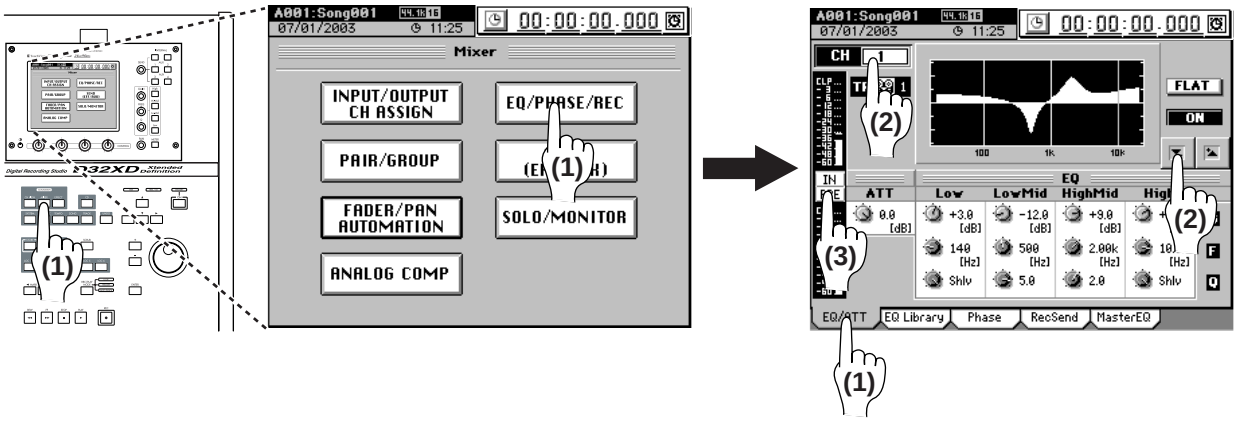
(3) Perform the actions described beginning with step (3) under "Applying effects to the input sound" (→p.24).



Applying EQ to each channel/track

(1) Press the MIXER key, and select EQ/PHASE/REC [*EQ/ATT/PHASE] in the page jump menu. Then select the "EQ/ATT" tab page.

note *You can move from another tab page or page mode directly to the "**EQ/ATT**" tab page by turning one of the **EQ** knobs or pressing one of the **EQ** keys (High, Hi-Mid, Lo-Mid, Low) located at the right of the LCD screen.*

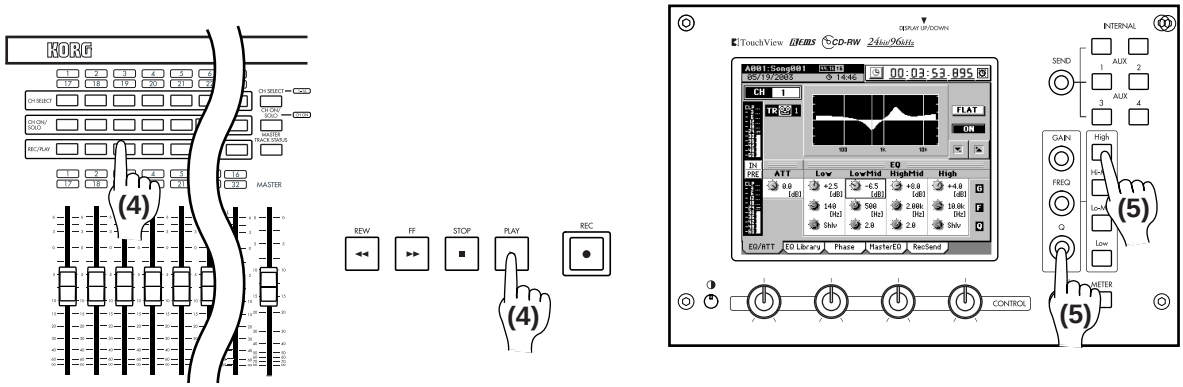


(2) Press the CH cell, and use the ▼/▲ buttons to select the channel whose EQ settings you wish to change.
You can also select a channel by pressing one of the **CH SELECT** keys.

(3) Press the position cell and set it to read IN/PRE.
IN stands for Input and PRE stands for pre-fader; these settings allow you to simultaneously check the input signal level, and the level of the signal immediately after the EQ has been applied.

(4) Be sure the REC/PLAY key for the track whose EQ settings you wish to change is set to PLAY (key lit green). Then press the PLAY key to begin playback of the song.

(5) While listening to the playback, use the EQ knobs and keys located at the right of the LCD screen to adjust the EQ.



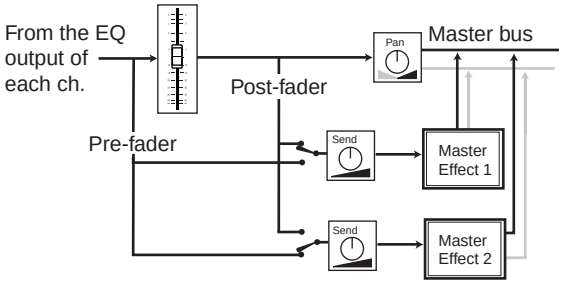
If the level meter (PRE) clips, press the **ATT** *knob icon in the LCD screen and adjust it to a value that does not cause clipping.*

Adjusting the pan

Adjust the stereo position of the playback tracks.
Press the **PLAY** key to play back. Then press the **CH SELECT** key of a playback track and turn the **PAN** knob to adjust its stereo position.
On the D16XD, turn the **PAN** knob of each playback track to adjust its stereo position.

Using the channel/track sends to apply effects (Master Effects)

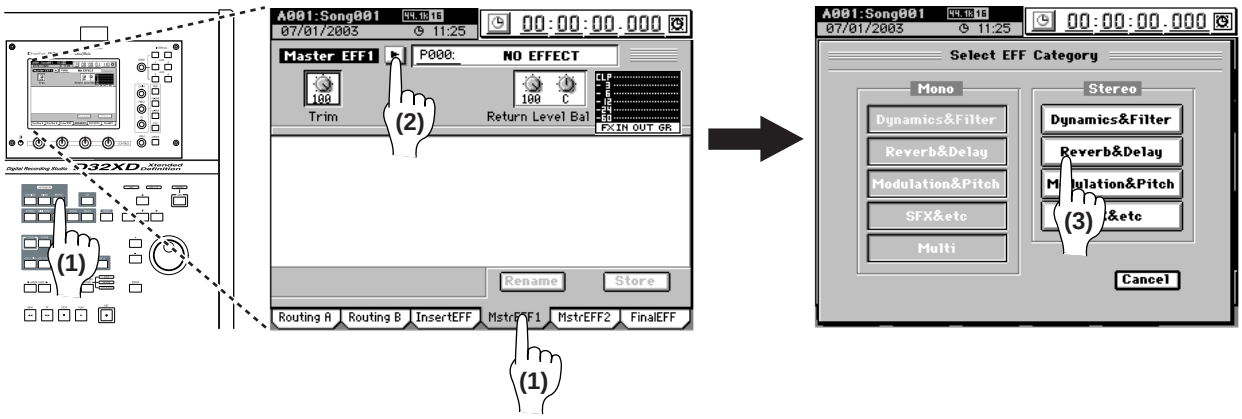
The D32XD/D16XD contains two master effects that can be used to apply spatial effects such as reverb.
You can set the effect balance by adjusting the effect send of each channel and the effect return level.



note *You can select an effect either by using the* ***EFFECT****,* ***"MstrEFF1"*** *tab page as explained here, or by making a selection in the MasterEFF1 cell of the* ***EFFECT****,* ***"Routing A [*EFFRouting]"*** *tab page as explained earlier in Step 1. If you want to select an effect while viewing (or editing) its parameters, use the first method. Use the first method if you want to view (or edit) the effect parameters while selecting an effect; use the second method if you want to check the overall balance of the effect without editing it.*

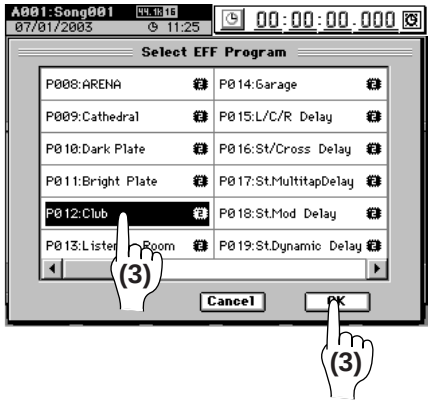
Selecting a master effect

(1) Press the EFFECT key and select the "MstrEFF1" tab page.



(2) Press the popup button beside the effect name, and the Select EFF Category dialog box will appear.

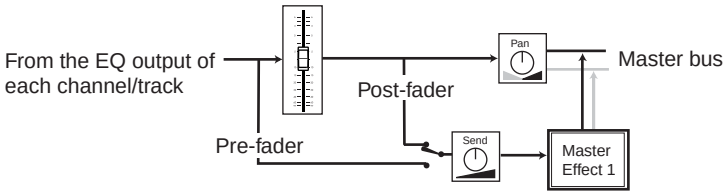
(3) Press a category button in the LCD screen, and the Select EFF Program dialog box will appear.
For this example press **"Club"** and then press the **OK** button.
If you want to go back and look in another category, press **Cancel** button.



Adjusting the Master Effect 1 Send amount for each track

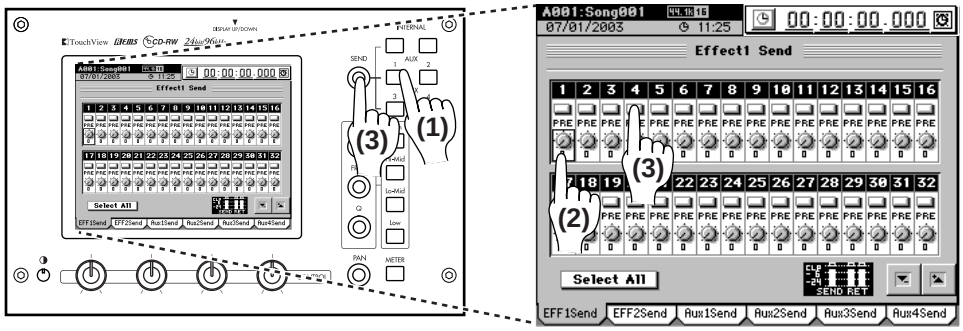
(1) Press the INTERNAL 1 key located beside the SEND knob to display the "EFF1Send" tab page.
Alternatively, you can access this page by pressing the **MIXER** key, choosing **SEND (EFF/AUX [*/REC])**, and selecting the **"EFF1Send"** tab page.

(2) Select how the audio signal will be sent to master effect 1.
You can choose to send either the pre-fader signal (PRE) or the post-fader signal (POST) to master effect 1.



Press the **PRE (PST)** button located above the knob icon to make your choice.
For this example, select **"PRE"** for all tracks that will be using master effect 1.

(3) Adjust the send amount of each track.
Press the **SEND** knob icon, and turn the **SEND** knob located to the right of the LCD screen to adjust the send amount for that track.



In this way, the send value controls the level of each track being sent to this master effect.
For the tracks you don't want to use master effect 1, set the send value to **"0."**

(4) Make settings for master effect 2 in the same way, using the "MstrEFF2" and "EFFSend2" tab pages.

Checking and adjusting the master effect

(1) Press the PLAY key to play back the song.
As the song plays, listen to the output of the master bus to hear the results of your effect settings.

(2) In the EFFECT, "MstrEFF1" (or "MstrEFF2") tab page, adjust the return level and return balance of the signal from the master effect to the master bus.
For this example, set **"Return Level"** to **"100,"** and **"Return Balance"** to **"C."**

(3) If the output level meter clips, press the TRIM knob icon in the LCD screen and adjust the value until no clipping occurs.
For details on editing the parameters of the selected effect, refer to "4. Editing the effects" (→p.59) in the Operation section.

2. Applying effects and EQ to the entire song

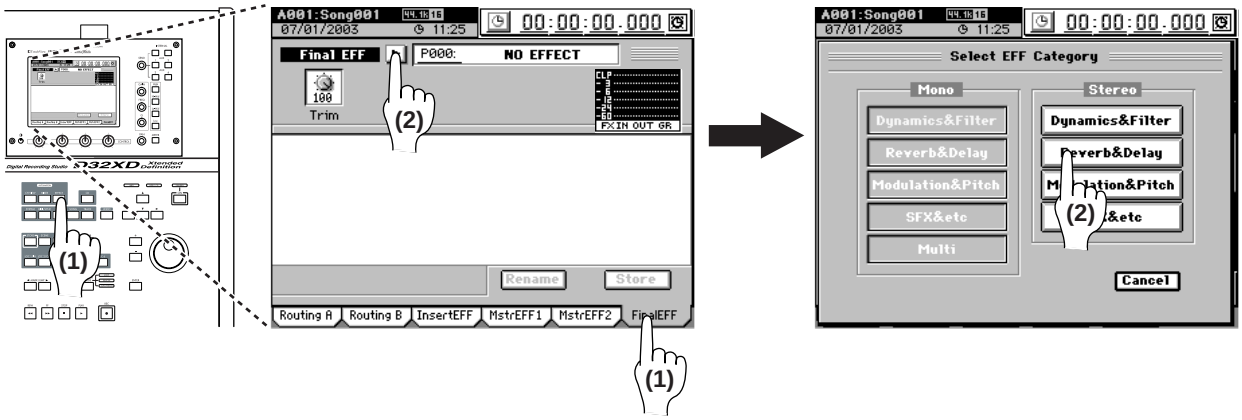
Checking the volume

Use the channel faders to adjust the playback level.
Press the **METER** key to display the **Post Fader** level meters.
Press the popup button to open the **"Meter Trk Type"** dialog box. Set the **Select Level Meter Position** to **"Post Fader,"** and set **Select View** to **"Track View."** Now the meters will show the level for each fader.

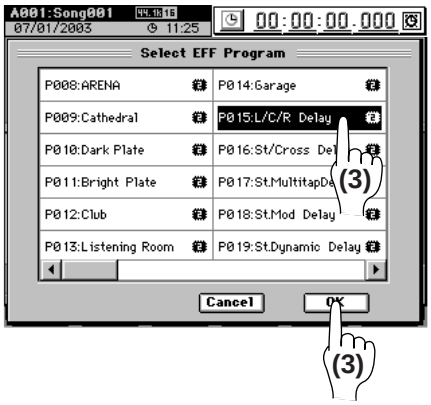
Applying an effect to the master bus (Final Effect)

(1) Press the EFFECT key and select the "FinalEff" tab page.

(2) Press the popup button to open the Select EFF Category window, and select a final effect category.
For this example press **"Reverb&Delay."**



(3) The Select EFF Program dialog box will appear. Here you can select the effect.
For this example press **"L/C/R Delay"** and then press the **OK** button. If you want to go back and look in another category, press Cancel button.



(4) Press the PLAY key to play back the song. Listen to the output of the master bus or the headphones to hear the results of the final effect.

(5) Make the desired adjustments, and then press the STOP key.
For details on editing the parameters of the effect that you selected, refer to "4. Editing the effects" (→p.59) in the Operation section.

Applying EQ to the master bus (Master EQ)

(1) Press the MIXER key, press the EQ/PHASE/REC [*EQ/ATT/PHASE] button in the page jump menu, then select the "MasterEQ" tab page.

(2) For this example, press the Link button to turn it on (highlighted).
When the **Link** button is on, adjusting either side (left or right channel) will make the same settings for both channels (→p.48).

(3) Make sure that the L button is on (highlighted); the display will show the left channel master EQ screen.

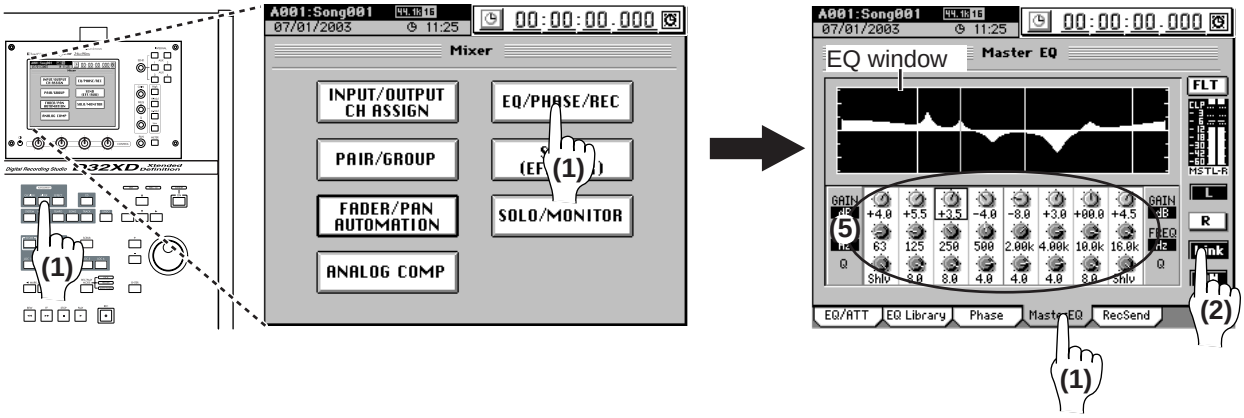
(4) Press the PLAY key to play back the song.

(5) While listening to the output of the master bus or the headphones, select the various EQ knob icons in the LCD screen and use the value dial (or the +/– keys) to adjust the EQ settings.
The EQ window displays the EQ curve.
You can switch the master EQ on/off by pressing the **ON/OFF** button in the LCD screen.

*If you want to make independent settings for the left and right master EQ, turn off the **Link** button and use the **R** or **L** button to select right or left.*

The EQ knobs and keys at the right of the LCD screen will not adjust the master EQ.

(6) When you're done adjusting the master EQ, press the STOP key.



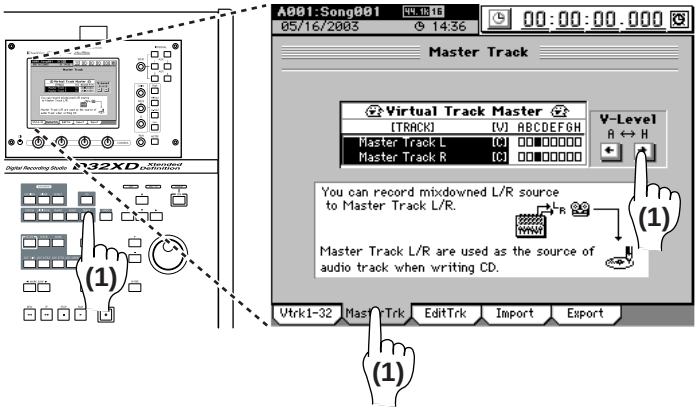
3. Recording on the master track

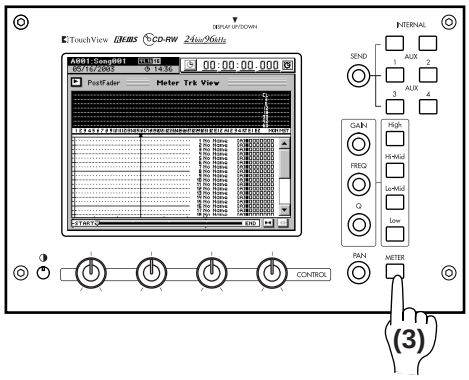
To create an audio CD, you will record the mixed-down song onto a stereo master track.
The master track of each song consists of eight virtual tracks; A–H. Having these virtual master tracks will allow you to try various "mixes" of your song, and then listen to pick your favorite.

(1) To specify which of the master virtual tracks you will use, press the TRACK key, select the "MasterTrack" tab page, and use the V-Level buttons.

(2) Preparing to record to the master track.
Set the **MASTER TRACK STATUS** key to REC (key lit red) to arm the master track for recording. The **REC/PLAY** keys of tracks 1–16 will automatically change to PLAY (key lit green).

(3) Adjust the recording level.
- Set the **MASTER** fader to **"0."**
- Press the **METER** key to display the **Meter Trk View** screen.
- Press the **PLAY** key to play back the song.
- If the master bus level meter indicates **"CLP,"** adjust the **MASTER** fader.

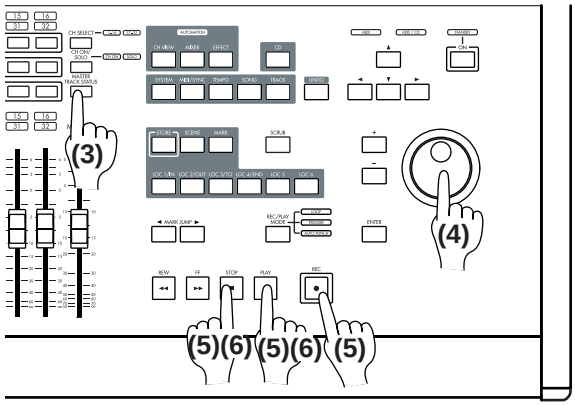




(4) Return to the beginning of the song. (→p.38)

(5) Record the master track.
Press the **REC** key to enter record-ready condition (LED blinking), and then press the **PLAY** key to begin recording (LED lit).
When you finish recording, press the **STOP** key.

(6) Listen to the recorded result.
Press the **MASTER TRACK STATUS** key to set it to PLAY (key lit green).
The **REC/PLAY** keys of tracks 1–16 will automatically change to muted (key unlit).
Return to the beginning of the song. (→p.38)
Press the **PLAY** key, listen to the playback, and then press the **STOP** key.



4. Writing to a CD

You can use the CD-R/RW drive to create an audio CD from the master tracks you recorded.
For details, refer to the Operation section, "CD" (→p.78).

Saving your song

On the D32XD/D16XD, the song data that you have recorded or edited and the parameters that you have set are automatically saved during the shut-down operation when you turn off the power. These settings are also saved when you select a different song. This is called "auto-save."
You can also save data manually (→p.137 "Save Now").

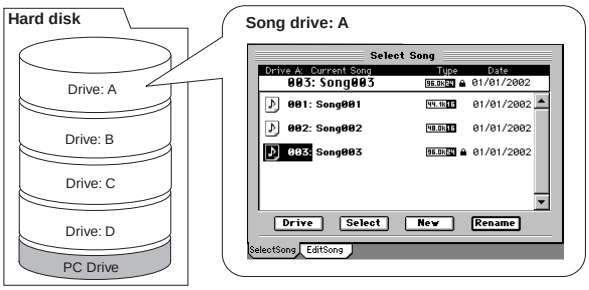
The auto-save that occurs when you select a song does not save the scene or effect settings you were editing. If you want to keep the settings you were editing, you must first return to the appropriate edit screen and Store them (→p.52 "4. Storing/recalling a scene," p.59 "4. Editing the effects").

Operation

Song, Locate

Each song drive on the D32XD/D16XD's internal hard disk can store up to one hundred songs.

How the hard disk, drives, and songs are related



1. Selecting/creating a song

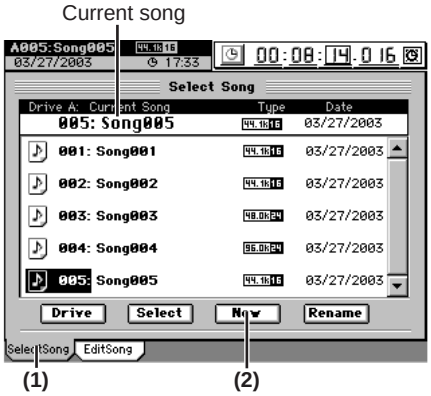
Here's how to create, rename, or select a song.

1-1. Creating a new song

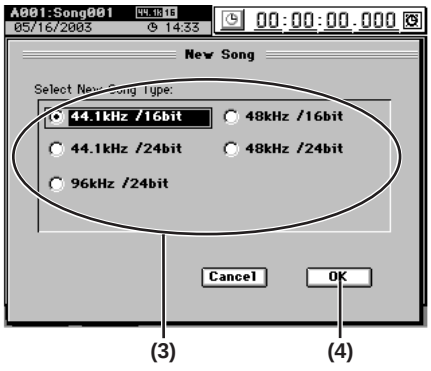
In order to begin a new recording, you will first need to create a new song.

(1) Press the SONG key and select the "SelectSong" tab page.

The upper part of the tab page shows which song is selected as the current song.



(2) Press the New button to display the New Song dialog box.



(3) Use the radio buttons to select the desired combination of sampling frequency and bit depth for your new song.

Maximum number of simultaneously usable tracks for each Song Type

Song Type	Recording	Playback	Punch recording
44.1 kHz/16-bit	16	32 [*16]	8
48 kHz/16-bit			
44.1 kHz/24-bit	8	16	4
48 kHz/24-bit			
96 kHz/24-bit	4	8	2

(4) Press the OK button.

The new song will be created following the last existing song, and will be added to the song list. It will also be selected as the current song.

The song name will automatically be **"Song□□□*"** ("□□□*" will be a consecutive number starting from 001.).

The sampling frequency, bit depth, and date and time of last modification (in this case, the date and time of creation) will be stored, and displayed next to the song name.

If you want to create a new song on a different song drive, start by pressing the **Drive** button to switch song drives. (→p.37 "Selecting a song from another song drive").

*If the Song Type is 48 kHz/24-bit and you record multiple tracks (four or more tracks) simultaneously, there is a increased possibility that the state of the hard disk recording area (i.e., fragmentation) will cause the **"Disk too busy."** message to appear. We recommend that you always execute **"OptimizeTrk"** (→p.73) after recording or editing multiple tracks simultaneously in a 48 kHz/24-bit song.*

1-2. Renaming a song

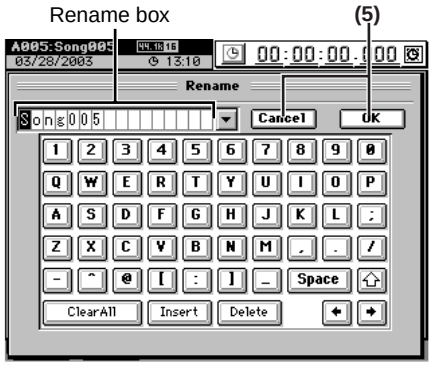
When a new song is created, it is automatically assigned a song number. We recommend that you change the song name to indicate its content.

Song names can be up to 16 characters in length.

(1) Press the SONG key and select the "SelectSong" tab page.

(2) From the song list, select (highlight) the song that you want to rename.

(3) Press the Rename button to display the Rename dialog box.



(4) Use the buttons in the screen to edit the song name in the Rename box.

Space : Enters a space.

ClearAll : Erases the entire name.

: Switches between upper and lower case characters.

Insert : Inserts a space, and moves the subsequent characters to the right.

Delete : Deletes the character at the cursor location.

[◀][▶]: Move the cursor to the location of the character you want to change.

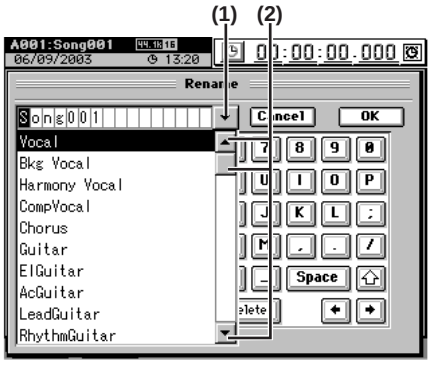
[▼]: Displays the name template (name library list).

(5) Finalize your changes.
Press the **OK** button to finalize the edited name, or press the **Cancel** button to discard the changes you made.

Using the name library

(1) When the Rename dialog box is displayed, press the list button ([▼]) beside the rename box.

(2) Select (highlight) the name you want to use.
To choose a name that is outside the currently-displayed area, use the scroll bar/buttons to scroll through the list.



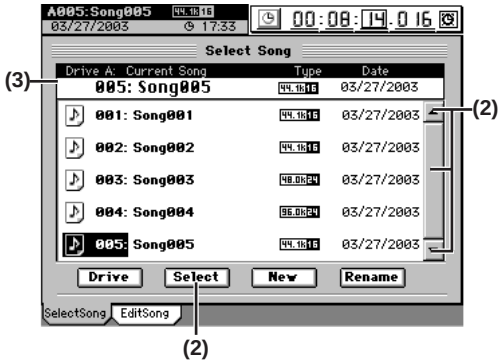
(3) Edit the song name as desired.
Refer to "1-2. Renaming a song," steps (4) and (5).

1-3. Selecting a song

There are two ways to select an existing song.

Selecting a song from the song list

(1) Press the SONG key and select the "SelectSong" tab page to display the song list of the current song drive.



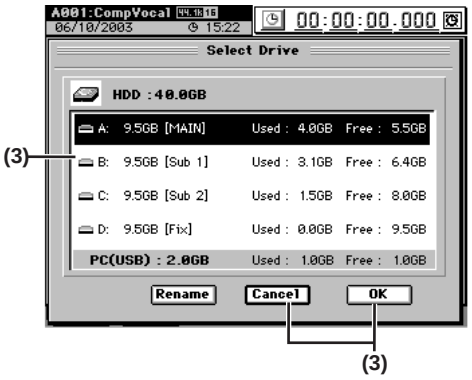
(2) Select (highlight) the desired song, and press the Select button to confirm your selection.
If there are more than five songs, use the scroll bar/buttons to scroll through the list.

(3) Verify that the song you selected is displayed as the current song.

Selecting a song from another song drive

(1) Press the SONG key and select the "SelectSong" tab page.

(2) Press the Drive button to display the Select Drive dialog box.



(3) Select (highlight) the drive that contains the song you want to select, and press the OK button.
If you decide not to change drives, press the **Cancel** button.

(4) The "SelectSong" tab page will display the song list for the selected drive.
Select (highlight) the desired song, and press the **Select** button to confirm.
If there are more than five songs, use the scroll bar/buttons to scroll up and down through the list.

(5) Verify that the song you selected is displayed as the current song.

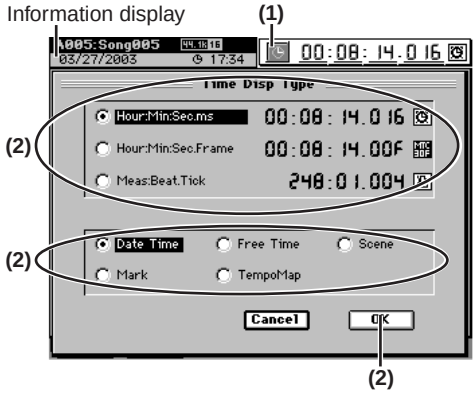
2. Location

The term "location" refers to a specific point in time within the selected song, as displayed in the counter.
The counter shows the current location within the song. The counter can be set to display the location in different formats. You can also use the counter to move to a different location.

2-1. Switching the counter display

You can switch the units that the counter uses to display the current location.

(1) Press the button to the left of the counter to open the Time Disp Type dialog box.



(2) Select the type of units you want the counter to use, and press the OK button.
You can choose one of the following three formats (→p.96 "Counter").

Time display

- __:__:__.___ "hours" : "minutes" : "seconds" . "milliseconds"

Frame display

- __:__:__:__F "hours" : "minutes" : "seconds" . "frames"

Measure display

- ___.__.___ "measures" . "beats" . "ticks"

Switching the information display area

The first line of the information display area shows the currently selected song. The second line can be switched to show either the calendar, remaining time, scene settings, mark settings, or tempo map.

(1) Press the button at the left of the counter to display the Time Disp Type dialog box.

(2) Press one of the following five radio buttons, and then press the OK button.

- **Date Time:** calendar (date and time)
- **Free Time:** remaining time for recording
- **Scene**: name and location of the scene for the current location in the song
- **Mark:** name of the mark for the current location in the song. If there is no mark at the current location, this displays the preceding mark and its location.
- **TempoMap:** the rhythm pattern at the current location of the song

2-2. Moving to a different location

Using the counter to move

(1) Select a page in which the counter is displayed at the top of the screen, such as the SONG, "SelectSong" tab page.

(2) Select the location counter unit that you want to change (it will be enclosed by a frame).

(3) Turn the value dial (or use the +/– keys) to move to the new location.

Using the FF and REW keys to move

Moving to a point later in the song (fast-forward)

Press the **FF** key.
If you hold down the **FF** key during playback, you will move toward the end of the song. Playback will resume when you release the key.
If you hold down the **FF** key while stopped, you will begin moving toward the end of the song and will continue moving until you press another transport key (such as **STOP** or **PLAY**).

*If you press the **FF** key during loop playback, loop playback will stop, and then the location will begin moving toward the end of the song.*

Moving to a point earlier in the song (rewind)

Press the **REW** key.
If you hold down the **REW** key during playback, you will move toward the beginning of the song. Playback will resume when you release the key.
If you hold down the **REW** key while stopped, you will begin moving toward the beginning of the song and will continue moving until you press another transport key (such as **STOP** or **PLAY**).

*If you press the **REW** key during loop playback, loop playback will stop, and then the location will begin moving toward the beginning of the song.*

Moving within a song

Moving to the beginning of the song

Hold down the **STOP** key and press the **MARK JUMP** (◄) key to move to the beginning of the song.

Moving to the end of the song

Hold down the **STOP** key and press the **MARK JUMP** (►) key to move to the end of the song.

Using the Locate keys to move

You can register a specific location for each of the Locate keys, and move immediately to those locations by pressing the appropriate key.
You can register up to six locations in each song.

note *In addition to recalling the registered locations, these keys are also used to specify locations for auto-punch recording (IN/OUT locations) and track editing (editing range). For details on the function of each locate key, refer to "16. LOC1/IN, … LOC6" (→p.149).*

Assigning locations to the Locate keys

(1) Move to the location that you want to register.
Use the counter or the **FF/REW** keys to move to the desired location.

(2) Press the STORE key; the Stored Time dialog box will appear, allowing you to register the location.
If you decide to cancel, press the **Exit** button or press the **STORE** key once again.

(3) Press one of the LOC1/IN, LOC2/OUT, LOC3/TO, LOC4/END, LOC5, or LOC6 keys to this location to that key. The registration will be completed, and the dialog box will close.

You can register a Locate key to a location during playback or recording simply by performing step (2).

If you want to set a location precisely while viewing the waveform, refer to "2-3. Finding a precise location (SCRUB)" (→p.40).

Moving to a location registered to a Locate key

While stopped or playing, press one of the **LOC1/IN**, **LOC2/OUT**, **LOC3/TO**, **LOC4/END**, **LOC5**, or **LOC6** keys. You will move to the registered location.

Moving using assignable Marks

You can register Marks at specific locations and use them to move to the registered locations.
You can name each mark, to indicate locations within the song.
Up to one hundred marks can be registered per song.

note *In addition to their use for finding a registered location, the Marks are also used to divide tracks when you create an audio CD (→p.79 "2. Disc At Once").*

Registering a mark

(1) Move to the location that you want to register.
Use the counter or **FF/REW** keys to move.

(2) Press the STORE key, and the Stored Time dialog box will appear.
If you decide not to register the location, press the **Exit** button or press the **STORE** key once again.

(3) Press the MARK key to register the location as a mark. The dialog box will close.

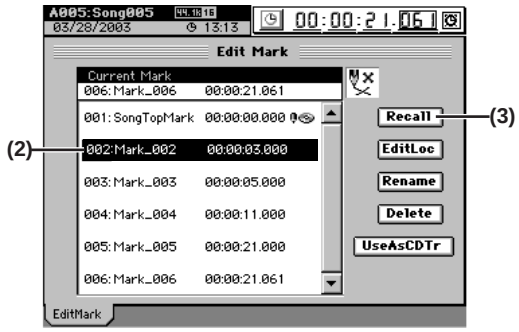
note *Mark numbers are automatically re-assigned in numerical order starting at the beginning of the song.*

(4) Verify that the mark was registered.
Press the **MARK** key and select the **"EditMark"** tab page, and verify that your new mark was registered.

During playback or recording, perform steps (2) – (4) to register a location as a Mark.

Moving to the location assigned to a mark

(1) Press the MARK key to display the "EditMark" tab page.

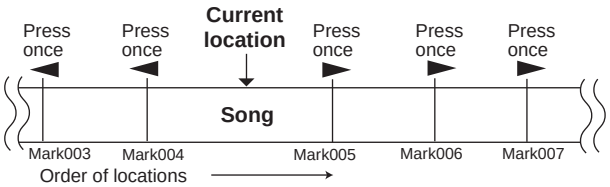


(2) In the mark list, press (highlight) the desired mark.
If necessary, use the scroll bar/buttons to scroll through the list.

(3) Press the Recall button to recall the mark.
"Current Mark" will show the selected mark, and you will move to the location of that mark.

Using the MARK JUMP keys to move

You can move to the registered location of a mark simply by pressing the **MARK JUMP** keys.
Each time you press the **MARK JUMP** (►) key, you will move to the next mark going toward the end of the song.
Each time you press the **MARK JUMP** (◄) key, you will move to the next mark going toward the beginning of the song.



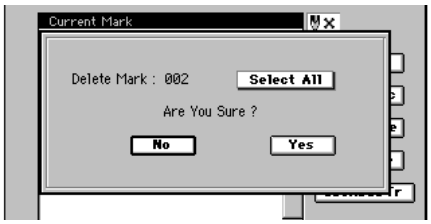
Deleting a mark

You cannot Undo the result of deleting a mark.

(1) Press the MARK key to display the "EditMark" tab page.

(2) From the mark list, select the mark that you want to delete.
If necessary, use the scroll bar/buttons to scroll through the list.

(3) Press the Delete button to display the Delete Mark dialog box.



(4) If you are sure you want to delete the mark, press the Yes button.
If you decide not to delete the mark, press the **No** button.
If you want to delete all marks, press the **Select All** button to turn it on (highlighted), and then press the **Yes** button to delete all marks.

(5) Verify that the mark has been deleted from the mark list.

Renaming a mark

(1) Press the MARK key to display the "EditMark" tab page.

(2) From the mark list, select the mark that you want to rename.
If necessary, use the scroll bar/buttons to scroll through the list.

(3) Press the Rename button to display the Rename dialog box.
For details on how to edit the name, refer to "1-2. Renaming a song" (→p.36).

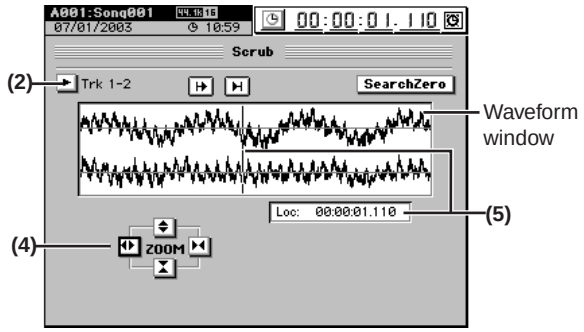
2-3. Finding a precise location (SCRUB)

By looking at the waveform data in the display, you can find a precise location. This allows you to register a locate point or a mark at the exact point where a sound begins.

note *You can view the waveform as described here in the SCRUB screen, and in the WAVE screen used for track editing (→p.139).*

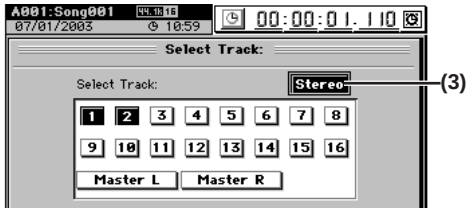
By watching the waveform as you listen to the audio, you can find the desired location of the song.

(1) Press the SCRUB key to display the "Scrub" page.
If you press the **SCRUB** key at a location later than the end of the song, the location will be set to the end of the song.



(2) Press the "Trk" popup button to display the Select Track dialog box.

D16XD



D32XD

(3) Select the track that you want to play back, and press the OK button.
If you press the **Stereo** button (highlight), you can view the waveforms of two adjacent channels in the upper and lower parts of the window while you play back.

(4) Use the ZOOM buttons to adjust the size and range of the displayed waveform.

(5) Turn the value dial to find the location while you listen to the sound.
The track audio will play back according to the direction and speed at which you turn the value dial.
The **Loc** cell and the vertical bar indicate the location of the audio you are hearing.

note *When you reach the desired location, press the **STORE** key and register the location in a **LOC** key or a mark.*

Finding a zero-cross point

If you press the **Search Zero** button, the location will move only to points where the waveform level crosses the ± 0 point.
Turn the dial toward the right to move to the next zero-cross point.
Turn the dial toward the left to move to the previous zero-cross point.

note *When using loop playback, or when setting IN, OUT, TO, and END points for a track editing operation, setting the location at a zero-cross point will ensure a smoother transition.*

*You cannot hear the audio while the **Search Zero** button is on.*

3. Song editing

Songs you record can be copied, rearranged, or deleted. You can also protect a song to keep it from being accidentally deleted.

You cannot use Undo to undo a song editing operation.

3-1. Song editing procedure

To perform a song editing operation, first select the song that you want to edit, and then press the **SONG** key and select the **"EditSong"** tab page.
Verify that the selected song is shown as the current song in the tab page. Then press a button to perform the desired editing operation.

Copying a song

You can copy a song to the desired song number.
This is convenient when you want to create a different remix or arrangement of the same song.

(1) Select the song that you want to copy. (→p.37)

(2) In the SONG, "EditSong" tab page, press the Copy button to display the Copy Song dialog box.
If you want to copy the song to another song drive, press the **Drive** button and use the **Select Drive** dialog box to select the drive (→p.37).

(3) Turn the value dial to select the copy-destination song number.

(4) To copy the song, press the Yes button.
If you decide to cancel, press the **No** button to close the dialog box.

(5) When the display indicates "Completed," press the OK button.
The dialog box will close, and you will return to the **"EditSong"** tab page.

note *If there is already a song at the copy-destination number, the song existing at the copy-destination and subsequent song numbers will be renumbered upward by one (→p.136 "9-2. Edit Song").*

The Undo information within the song will not be copied.

Moving a song

You can move a song to the specified song number.

(1) Select the song that you want to move. (→p.37)

(2) In the SONG, "EditSong" tab page, press the Move button to display the Move Song dialog box.
If you want to move the song to a different drive, press the **Drive** button and use the **Select Drive** dialog box to select the drive (→p.37).

If you move the song to a different song drive, the Undo information will not be retained.

(3) Turn the value dial to select the move-destination song number.

(4) To move the song, press the Yes button.
If you decide to cancel, press the **No** button to close the dialog box.

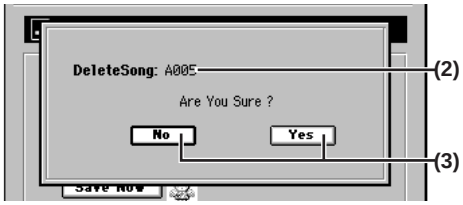
(5) When the display indicates "Completed," press the OK button.
The dialog box will close, and you will return to the **"EditSong"** tab page.

Deleting a song

You can delete a song.

(1) Select the song that you want to delete. (→p.37)

(2) In the SONG, "EditSong" tab page, press the Delete button to display the Delete Song dialog box.
Verify the drive name and song number of the song that you want to delete.



(3) To delete the song, press the Yes button.
If you decide to cancel, press the **No** button to close the dialog box.

(4) When the display indicates "Completed," press the OK button.
The dialog box will close, and you will return to the **"EditSong"** tab page.

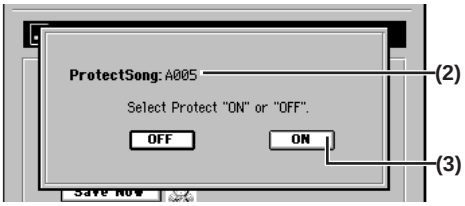
Protecting a song

You can protect a song so that it will not be accidentally overwritten or deleted.
If a song is protected, you will not be able to switch to REC by pressing the **REC/PLAY** key or **MASTER TRACK STATUS** key. Also, writing will be disabled for all parameters of that song.
When you protect a song, it will be saved automatically at that time (→p.137).

Protect On

(1) Select the song that you want to protect (→p.37).

(2) In the SONG, "EditSong" tab page, press the Protect button to display the Protect Song dialog box.
Verify the drive name and song number of the song that you want to protect.



(3) Press the ON button.

(4) When the display indicates "Completed," press the OK button.
The dialog box will close, and you will return to the **"EditSong"** tab page.

(5) Notice that a lock symbol "🔒" is displayed for the current song, indicating the song is protected.

Protect Off

(1) Select the song that you want to un-protect. (→p.37)
Protected songs are indicated by a lock symbol "🔒".

(2) In the SONG, "EditSong" tab page, press the Protect button to display the Protect Song dialog box.
Verify the drive name and song number of the song that you want to un-protect.

(3) Press the OFF button.

(4) When the display indicates "Completed," press the OK button.
The dialog box will close, and you will return to the **"EditSong"** tab page.

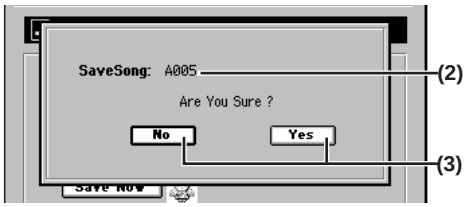
(5) Verify that the lock symbol "🔒" is no longer displayed for the current song.

Saving a song

Since the D32XD/D16XD automatically saves song data and parameters when you perform the shut-down operation or when you select a song, it is not absolutely necessary for you to save manually.
However if the power should be interrupted by a power failure or other accident, the data that has been recorded or edited since the most recent power-on (or since a song was last selected) will be lost.
We recommend that you use this command to save the data periodically after recording or editing for an extended period, or if you are using the D32XD/D16XD in an environment where the power supply is unreliable.

(1) In the SONG, "EditSong" tab page, press the Save Now button to display the Save Song dialog box.

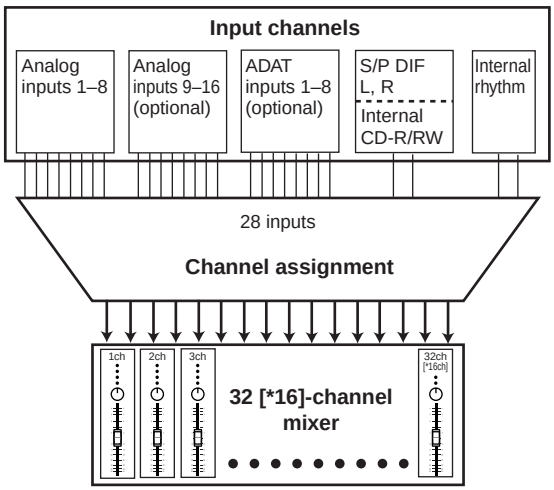
(2) Verify the drive name and song number of the song you will save.



(3) To save the song, press the Yes button.
If you decide to cancel, press the **No** button to close the dialog box.

(4) When the display indicates "Completed," press the OK button.
The dialog box will close, and you will return to the **"EditSong"** tab page.

Mixer



1. Inputting audio to the mixer

The D32XD/D16XD provides eight channels of analog input (sixteen channels if the optional 8-channel analog input board is installed) and one digital input jack (two if the optional ADAT I/O board is installed).
The audio signals coming from devices connected to these jacks can be assigned to the mixer channels and recorded. Audio from the internal rhythm tone generator or the CD-R/RW can also be assigned to the mixer channels.

Here's how to assign each input to a mixer channel and check the audio signal.

1-1. Analog input

You can connect audio sources such as guitars, keyboards, or mics to the analog input jacks.

Inputting audio from a guitar

i.e. Connecting a guitar to the GUITAR IN jack and assigning it to mixer channel 1.

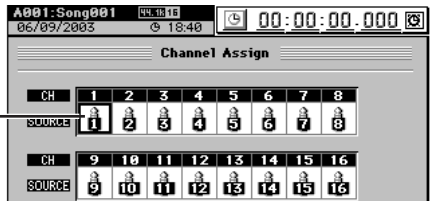
(1) Connect the guitar.
Lower the **MASTER** fader, and then connect the guitar to the **GUITAR IN** jack.

(2) Select INPUT 1 as the audio source.

- Access the **MIXER**, **INPUT/OUTPUT/CH ASSIGN**, **"Ch Assign"** tab page.
- Use the ▼ / ▲ buttons to set the CH1 **"SOURCE"** to **"1".** You can also use the **value dial** or the **+/–** keys to make your selection.

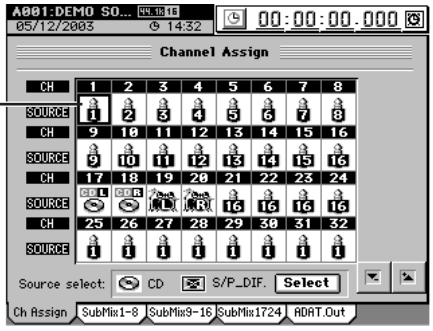
note *The **GUITAR IN** jack is shared with the **INPUT 1** jack. Specify its input channel and adjust its input level as **INPUT 1**.*

D16XD



(2)

D32XD



(2)

(3) Assign the input to mixer channel 1.

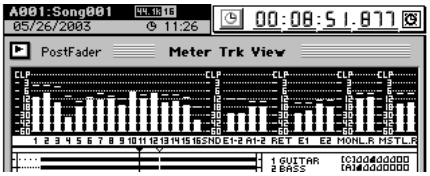
- Set the **CH ON/SOLO** mode key to **CH ON** (key lit green), and turn the channel 1 **CH ON/SOLO** key on (key lit orange).
- Set the channel 1 **REC/PLAY** key to REC (key lit red).

(4) Adjust the input level.

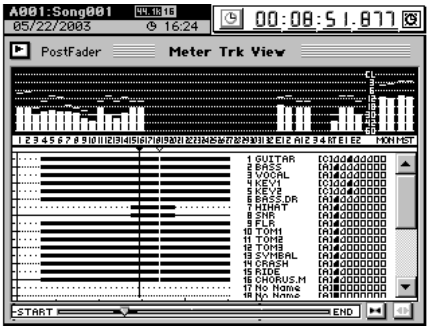
- Press the **METER** key to display the **Meter Trk View** screen.
- Press the **Meter Trk Type** button to display the **Meter Trk Type** dialog box.
- For **"Select Level Meter Position,"** select **"CH-Input"** as the level meter mode. Then press the **OK** button to return to the previous screen.
- Turn the **INPUT 1 TRIM** knob toward the right while playing your guitar ; the peak indicator (the LED near the **TRIM** knob) will light. Adjust the **TRIM** knob so that the indicator does not light red when you play at your loudest level.
- If the input is too loud, turn on the **PAD** key.
- The level meter in the **Meter Trk View** screen will move in response to the input. Verify that the level meter does not reach **"CLP"** when you play at your loudest level.

note *When adjusting the input level, you may find it helpful to set a longer **"Peak Hold Time"** in the **Meter Trk Type** dialog box.*

D16XD

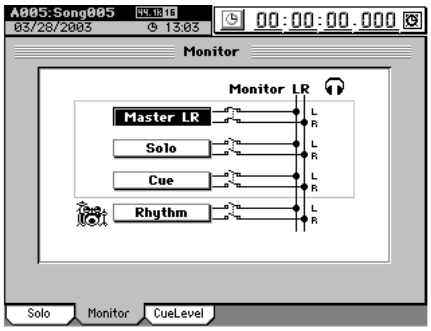


D32XD



(5) Check the audio.

- Set the channel 1 fader to unity gain (0 dB).
- Access the **MIXER**, **SOLO/MONITOR**, **"Monitor"** tab page.
- Select **"Master LR"** and turn it on (highlighted).
- Gradually raise the **MASTER** fader and the **PHONES VOLUME** knob or the **MONITOR LEVEL** knob, and verify that you hear the sound in your headphones or in the monitor system connected to the **MONITOR OUT** jacks.



Inputting audio from a CD

i.e. Assigning audio from the internal CD-R/RW to mixer channels 1 and 2.

(1) Select the internal CD-R/RW as the audio source.

- Access the **MIXER**, **INPUT/OUTPUT/CH ASSIGN**, **"Ch Assign"** tab page.
- Press the **Select** button, and in the **Source select** dialog box choose **"CD."**
- The **"Obey Copyright Rules"** message will appear. Carefully read "COPYRIGHT WARNING" (→p.iii) in the owner's manual, and if you accept the terms, press the **OK** button.

  Select the channel 1 **"SOURCE,"** and use the ▼ / ▲ buttons to select **"CD L."** You can also use the **value dial** or the **+/–** keys to make your selection.
  In the same way, select **"CD R"** for channel 2.

(2) Assign the input to mixer channels 1 and 2.

- Set the **CH ON/SOLO** mode key to **CH ON**, and set the channel 1 and 2 **CH ON/SOLO** keys to on (keys lit orange).
- Set the channel 1 and 2 **REC/PLAY** keys to REC (key lit red).

(3) Play the CD.

- Access the **CD**, **CD PLAYER**, **CD Player** page.
- Press the play (▶) button.

(4) Adjust the input level settings.

- Press the **METER** key to display the **Meter Trk View** screen.
- Press the **Meter Trk Type** button to display the **Meter Trk Type** dialog box.
- In **"Select Level Meter Position,"** set the level meter mode to **"CH-Input,"** and press the **OK** button to return to the previous screen.
- The CH1 and 2 level meters will move in response to the input.

(5) Check the audio.

- Set the channel 1 and 2 faders to unity gain (0 dB).
- Access the **MIXER**, **SOLO/MONITOR**, **"Monitor"** tab page.
- Turn **"Master LR"** on (highlighted).
- Gradually raise the **MASTER** fader and **PHONES VOLUME** knob or **MONITOR LEVEL** knob, and verify that you hear the sound from your headphones or your monitor system connected to the **MONITOR OUT** jacks.

1-2. Digital input

The D32XD/D16XD lets you input and record digital sources from the S/P DIF or ADAT inputs.

You can input a digital source only if its sampling frequency matches the sampling frequency of the currently selected song.

If you input a 24-bit signal into a 16-bit song, the sound you monitor will be 24-bit, but it will be converted to 16-bit data when it is recorded.

You cannot input from ADAT into a 96 kHz/24-bit song.

When making digital input settings for S/P DIF or ADAT, you may hear noise due to synchronization difficulties. Please turn down the faders or turn down the volume of your monitor speakers before you adjust these settings.

Inputting the digital audio signal from a CD or DAT

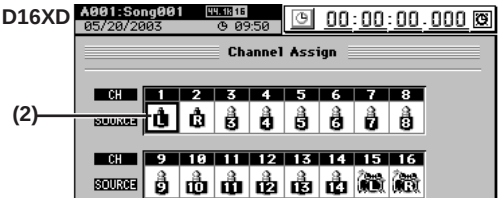
i.e. Connecting the digital output of your external CD player to the S/P DIF IN jack, and assigning it to channels 1 and 2.

(1) Connect your CD player.
Lower the D32XD/D16XD's **MASTER** fader, and use an optical digital cable to connect the digital output of your CD player to the **S/P DIF IN** jack.

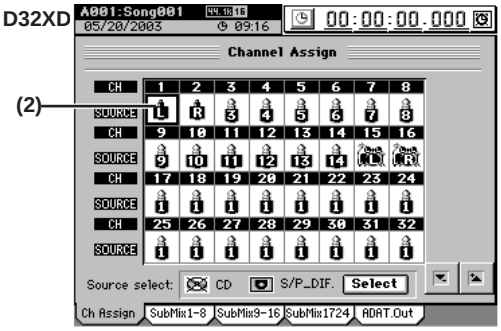
(2) Specify the S/P DIF inputs as the digital audio source.

- Access the **MIXER**, **INPUT/OUTPUT/CH ASSIGN**, **"Ch Assign"** tab page.

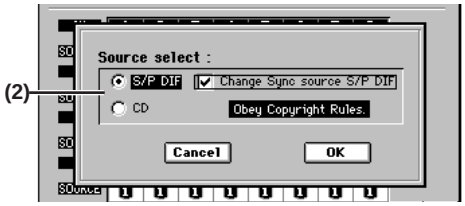
D16XD



D32XD



- Press the **Select** button, and in the **Source select** dialog box select **"S/P DIF."**
- Adjust the synchronization settings. Add a check in the **"Change Sync source S/P DIF"** check box.
  The **"Obey Copyright Rules"** message will appear. Carefully read "COPYRIGHT WARNING" (→p.iii) in the owner's manual, and if you accept the terms, press the **OK** button.



- Select the channel 1 **"SOURCE,"** and use the ▼ / ▲ buttons to select **"L"** (L). You can also use the **value dial** or the **+/–** keys to make your selection.
  In the same way, set channel 2 to **"R"** (R).

(3) Assign the input audio to mixer channels 1 and 2.

- Set the **CH ON/SOLO** mode key to **CH ON**, and turn the channel 1 and 2 **CH ON/SOLO** keys on (keys lit).
- Set the channel 1 and 2 **REC/PLAY** keys to REC (keys lit red).

(4) Adjust the input level settings.

- Press the **METER** key to display the **Meter Trk View** screen.
- Press the **Meter Trk Type** button to display the **Meter Trk Type** dialog box.
- In **"Select Level Meter Position,"** select **"CH-Input"** as the level meter mode, and press the **OK** button to return to the previous screen.
- When you play back your CD player, the CH 1 and 2 level meters will move in response to the input.

(5) Check the audio.

- Set the channel 1 and 2 faders to unity gain (0 dB).
- Access the **MIXER**, **SOLO/MONITOR**, **"Monitor"** tab page.
- Select **"Master LR,"** and turn it on (highlighted).
- Gradually raise the **MASTER** fader and **PHONES VOLUME** knob or **MONITOR LEVEL** knob, and verify that you hear the sound from your headphones or your monitor system connected to the **MONITOR OUT** jacks.

Inputting the digital audio signal from an ADAT device

i.e. Assigning eight sources from an ADAT device to channels 1–8.

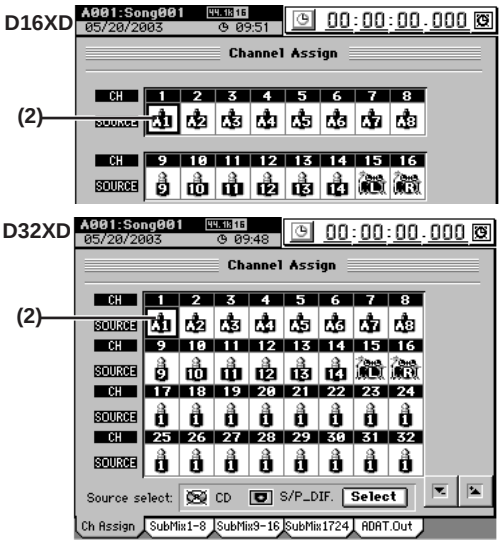
The optional ADAT I/O board must be installed (→p.178).

ADAT input cannot be assigned if the current song is 96 kHz/24-bit.

(1) Connect your ADAT device.
Lower the D32XD/D16XD's **MASTER** fader, and use an optical digital cable to connect the ADAT OUT jack of your ADAT device to the D32XD/D16XD's **ADAT IN** jack.

(2) Specify the ADAT input as the digital audio source.

- Access the **MIXER**, **INPUT/OUTPUT/CH ASSIGN**, **"Ch Assign"** tab page.
- Select the channel 1 **"SOURCE,"** and use the ▼ / ▲ buttons to select **"A1."** You can also use the **value dial** or the **+/–** keys to make your selection.
  In the same way, select **"A2"**–**"A8"** for channels 2–8.



(3) Adjust the synchronization settings.

- Access the **SYSTEM**, **"Word Clock"** tab page.
- Press the **Clock Source** button to display the **Clock Source** dialog box.
- If you want to use your ADAT device as the synchronization clock master, set **Word Clock Source** to **"ADAT."**
- Press the **OK** button to close the dialog box.

(4) Assign the input audio to mixer channels 1–8.

- Set the **CH ON/SOLO** mode key to **CH ON**, and turn the channel 1–8 **CH ON/SOLO** keys on (keys lit).
- Press the track 1–8 **REC/PLAY** keys to set them to REC (key lit red), and start the Playback on your ADAT device.

(5) Adjust the input levels.

- Press the **METER** key to display the **Meter Trk View** screen.
- Press the **Meter Trk Type** button to display the **Meter Trk Type** dialog box.
- In **"Select Level Meter Position,"** select **"CH-Input"** as the level meter mode, and press the **OK** button to return to the previous screen.
- When you start your ADAT device, the CH1–8 level meters will move in response to the input.

1-3. Sub input

The audio sources from the INPUT 1–8 jacks can be sent to the sub-mixer and output directly to the master bus, independently of being input to the mixer.

note *Sub Mixer 1-8 corresponds to INPUT 1-8 jacks respectively. If the 8-channel analog input board is installed, Sub Mixer 9-16 will be available and will correspond to INPUT 9-16 jacks. If the ADAT I/O board is installed, Sub Mixer 17-24 will be available and will correspond to the ADAT INPUT.*

Here are some ways in which you can use this:

- You can add external input sources to the recorded sounds that are playing back.
- You can apply external effects to the audio signal sent from the **AUX OUT** jacks, and send the processed signal via the sub-mixer to the master bus.

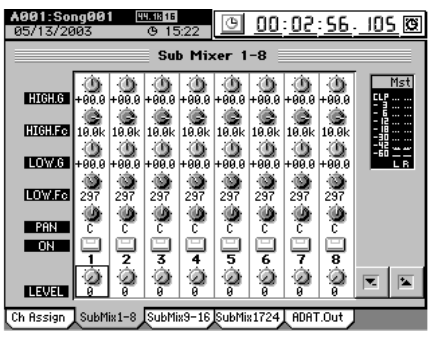
i.e. Inputting audio to the INPUT 1 jack, assigning it to sub-mixer 1, and outputting the audio.

(1) Connect an audio signal to the INPUT 1 jack.

(2) Adjust the sub-mixer settings.

- Access the **MIXER**, **INPUT/OUTPUT/CH ASSIGN**, **"SubMix1–8"** tab page.
- Since you are inputting audio to the **INPUT 1** jack, press the Sub Mixer 1 **ON** button.

note *The "**SubMix9–16**" and "**SubMix1724**" tab pages are available only if the optional 8-channel analog input board and ADAT I/O board are installed.*



(3) Check the input to the sub-mixer.

- Set LEVEL, PAN, and EQ in the same way as when making settings for the ordinary mixer.

  Sub mixer 13–16 EQ and sub mixer 17–24 are not available for 96 kHz/24-bit songs.

- Verify that you hear the input source through your headphones or monitor system.

1-4. Analog compressors

You can use the analog compressors to prevent distortion from being caused by excessive input levels prior to digital conversion.
There are fifty preset programs containing analog compressor settings, and another fifty user-writable programs in which you can store your own settings, giving you a total of one hundred compression programs.
You can store your own settings in a user compression program, and recall it in the same way as a preset program.

The analog compressors are particularly effective in cases such as the following:

- If the input material fluctuates widely between low and high levels, adjusting the level according to the high portions will make the volume too low when a low-level portion follows. In such situations, use compression to hold down the volume of the high-level portions and boost the low-level portions, making the volume more consistent.
- When inputting a vocal from a mic, compression can be used to prevent the peaks from clipping during climactic passages or shouts.
- Compression can be used to enhance the sound of a guitar, making it more cohesive.

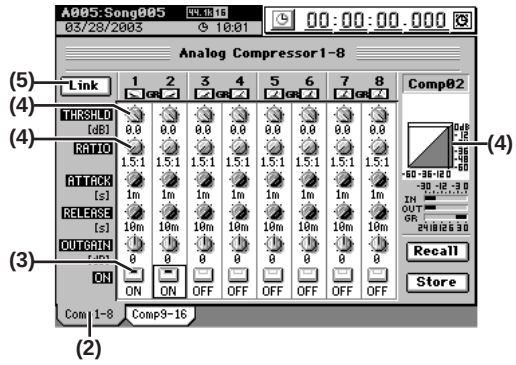
Due to the characteristics of analog circuitry, it will take approximately 15 minutes after power-on for the value of the parameter settings to stabilize.

Using the analog compressors

i.e. Restraining the maximum level of a guitar connected to the GUITAR IN jack.

(1) Connect your guitar to the GUITAR IN jack.
Refer to 1-1. Analog input, "i.e. Connecting a guitar to the GUITAR IN jack and assigning it to mixer channel 1."

(2) Access the MIXER, "ANALOG COMP," "Comp1-8" tab page.

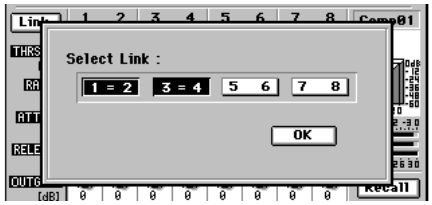


(3) Press the channel 1 ON button to turn it on.

Comp channels 1–8 correspond to INPUT 1–8 jacks; i.e., the comp channel 1 is for the INPUT 1 jack, and comp channel 2 is for the INPUT 2 jack, etc.

(4) Begin playing the guitar, and view the level curve as you adjust the compressor.
While watching the OUT level meter, lower the **Threshold** and adjust the **Ratio**.

(5) If you want the adjacent Comp channel to have the same settings, press the Link button to display the Select Link dialog box.

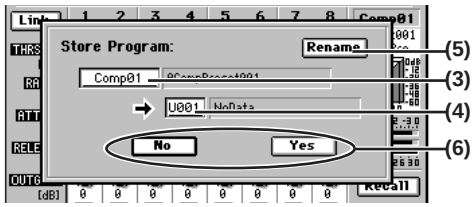


- Press the button for the channel you want to link, and press the **OK** button.
- The settings of the odd-numbered channel will be copied to the even-numbered channel.
- The knobs of the odd-numbered and even-numbered channels will be linked; operating either side will affect both channels.

Saving your analog compressor settings (Comp Program)

(1) Use the MIXER, "ANALOG COMP," "Comp1-8" tab page to adjust the compressor.

(2) Press the Store button to display the Store Program dialog box.



(3) Select the compressor channel whose settings you want to store.
Press the cell to highlight it, and use the **value dial** (or the **+/–** keys) to make your selection.

(4) Select the store-destination program number.
Press the cell to highlight it, and use the **value dial** (or the **+/–** keys) to make your selection.

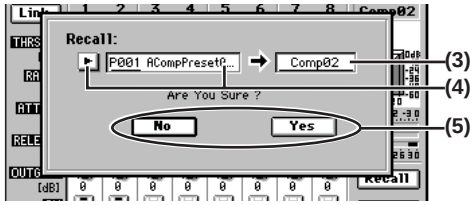
(5) If you want to name or rename the program, press the Rename button to open the Rename dialog box.

(6) Save the program.
Press the **Yes** button to save the program.
If you decide not to save, press the **No** button.

Recalling analog compressor settings (Comp Program)

(1) Access the MIXER, "ANALOG COMP," "Comp1-8" tab page.

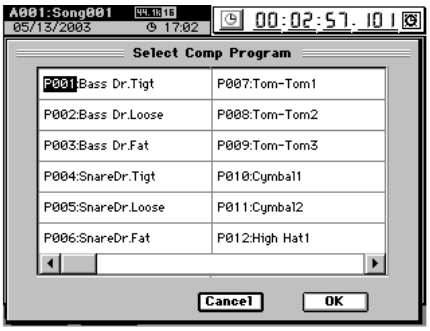
(2) Press the Recall button to display the Recall dialog box.



(3) Select the compressor channel where you want use the program.
Press the cell to highlight it, and use the **value dial** (or the **+/–** keys) to make your selection.

(4) Select the program you want to use.
Press the cell to highlighted it, and use the **value dial** (or the **+/–** keys) to make your selection.

Alternatively, you can press the **popup** button beside the cell to display the **Select Comp Program** dialog box, and make your selection there.



(5) Recall the comp program.
Press the **Yes** button to recall the program.
If you decide not to recall, press the **No** button.

2. Audio outputs from the mixer

MASTER OUT L, R
These outputs provide the audio signals from the master bus. Use the **MASTER** fader to adjust the volume of the **MASTER OUT** jacks and the level of the signal being recorded on the master track.

MONITOR OUT L, R
Refer to "3-7. Monitor settings" (→p.50).

AUX OUT 1, 2, 3, 4 [*1, 2]
Refer to "3e-3. Aux1 Send" (→p.112).

ADAT OUT
You can select the channels or tracks that will be output to an ADAT device.

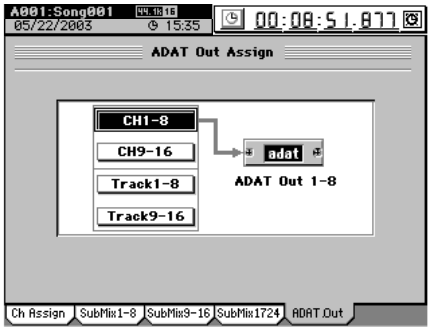
The optional ADAT I/O board must be installed (→p.178).

ADAT output is not possible if the current song is 96 kHz/24-bit.

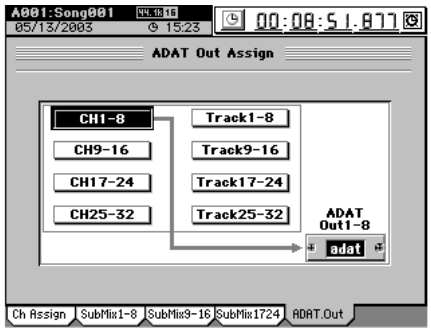
(1) Connect the cable to the ADAT OUT jack.

(2) Access the MIXER, INPUT/OUTPUT/CH ASSIGN, "ADAT.Out" tab page.

D16XD



D32XD



(3) Select the channels or tracks that you want to output to ADAT Out 1–8.

CH1–8, CH9–16, CH17–24, CH25–32 [*CH1–8, CH9–16]
The signals of CH1–8, CH9–16, CH17–24, or CH25–32 [*CH1–8 or CH9–16] will be output.
The sound with EQ and effects applied will be output during playback or recording.

Track 1–8, Track 9–16, Track 17–24, Track 25–32 [*Track 1–8, Track 9–16]
The playback of tracks 1–8, tracks 9–16, tracks 17–24, or tracks 25–32 [*tracks 1–8 or tracks 9–16] will be output.
The sound without EQ or effects will be output during playback.

S/P DIF OUT
This jack sends a digital audio version of the same audio signal as the MASTER OUT L/R jacks, at the same sampling frequency and bit depth as the current song.

3. Mixer settings

Adjust the overall sound of your song by using the mixer section to set the volume, tone, and pan settings for input or playback.

note *For details on effect settings, refer to "Effects" (→p.56).*

3-1. Adjusting the volume

Adjusting the volume level of each channel

Use the channel faders to adjust the input or playback volume. Raise or lower the fader to adjust the volume.

- If channels are paired, use the odd-numbered channel fader (→p.49).
- You can store these settings in a scene (→p.52).
- On the D32XD you can record these adjustments as automation (→p.54).

note *The channel faders have a range from silence (–∞) – unity gain (0 dB) – +6 dB of gain.*

Inputting a source at the maximum level

Ideally, an audio source you want to record should be input at the highest possible volume that does not cause clipping. To record at the ideal maximum level on the D32XD/D16XD, make adjustments according to the signal flow described below.

1. Analog input jack (INPUT 1–16) TRIM

This is the first adjustment that affects the level of the input source.

- **Channels to which an insert effect is not applied**
  Refer to 1-1. Analog input, step (4) (→p.42).
- **Channels to which an insert effect is applied**
  - Access the **EFFECT**, **"InsertEff"** tab page, and select the effect for the channel you are adjusting.
  - Set **"Trim"** to **"100."**
  - Adjust the **TRIM** knob so that the **"FX IN"** level meter does not reach **"CLP"** when the audio signal is input.

For details, refer to "4-3. Insert EFF" (→p.119).

note *Since the signals from the **S/P DIF** or **ADAT** jacks are input at unity gain (0 dB), you **do not need** to adjust the **TRIM**.*

2. Insert effect TRIM

In some cases, applying effects to the input signal you adjusted in step **1** may increase the volume, causing distortion. In this case, make the following adjustment.

- Access the **EFFECT**, **"InsertEFF"** tab page, and use the **InsEffect** edit cell to select the effect whose level you want to adjust.
- Adjust **"Trim"** so that the **"FX OUT"** level meter does not reach **"CLP"** when the audio signal is input.

For details, refer to "4-3. Insert EFF" (→p.119).

3. Attenuator

Finally, applying EQ may increase the volume level, causing the sound to distort. In this case, make the following adjustment.

- Access the **MIXER**, **EQ/PHASE/REC** [*EQ/ATT/PHASE], **"EQ/ATT"** tab page, use the **CH SELECT** keys to select the channel that you are inputting, and set the **REC/PLAY** key to REC.
- Adjust **"ATT"** so that the **"PRE"** level meter does not reach **"CLP"** when the audio signal is input.

For details, refer to "3d-1. EQ/ATT" (→p.109).

Adjusting the overall volume level

Use the **MASTER** fader to adjust the volume of the **MASTER OUT** jacks and the level of the signal being recorded on the master track.

Use the **MONITOR VOLUME** knob to adjust the volume of the **MONITOR OUT** jacks.

Use the **MONITOR VOLUME** knob or **PHONES VOLUME** knobs to adjust the volume of the headphone jacks.

3-2. Adjusting the pan

Use the **PAN** knobs to adjust the pan (stereo position) of each channel.

- You can store these settings in a scene (→p.52).
- If channels are paired, you can select how the **PAN** knob will operate. (→p.102)
- On the D32XD you can record these adjustments as automation (→p.54).

3-3. EQ (Equalizer)

The EQ can be used to cut unwanted frequency regions such as hiss, or to shape the tonal character by boosting or cutting a specific low- or high-frequency region.
The D32XD/D16XD provides channel EQ for adjusting the tone of each channel, and master EQ for adjusting the tone of the master bus.

Channel EQ

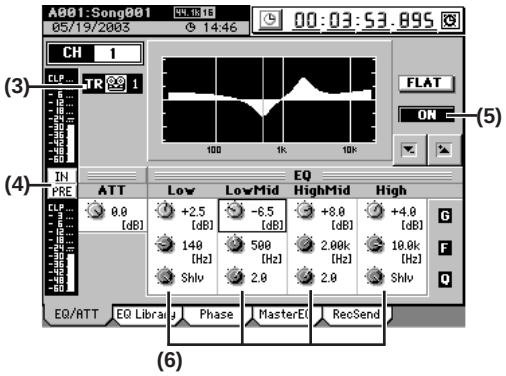
You can use four-channel full-parametric EQ to adjust the tone of each channel.

Adjust the channel EQ in the **MIXER**, **EQ/PHASE/REC** [*EQ/ATT/PHASE], **"EQ/ATT"** tab page, or in the **CH VIEW**, **"Ch View"** tab page.

note *When you operate one of the EQ knobs or keys located at the right of the LCD screen, the **"EQ/ATT"** tab page will appear automatically, allowing you to edit the EQ immediately.*
*However if you are in the **CH VIEW** "**Ch Routing**" tab page, you will make adjustments in the "**Ch View**" tab page.*

Applying EQ to an audio input

You can apply EQ to an audio input, and record the EQ'ed sound.



(1) Input an audio signal. (→p.42 "1. Inputting audio to the mixer")

(2) Access the MIXER, EQ/PHASE/REC [*EQ/ATT/PHASE], "EQ/ATT" tab page, and make sure that the REC/PLAY key of the channel whose EQ you want to adjust is set to REC (key lit red).

(3) Press the appropriate CH SELECT key, and make sure that it is set to "IN."

(4) Set the level meter to "IN/PRE."

(5) Use the ON/OFF button to turn on the EQ.
If this is off, the EQ will not be applied.

(6) Use the EQ knobs to adjust the EQ. (→p.109 "3d-1. EQ/ATT")

note *If the level meter indicates clipping, select the ATT knob icon and adjust it so that clipping does not occur.*

Applying EQ to the playback

(1) Play back the song. (→p.68 "2-1. Normal playback")

(2) Access the MIXER, EQ/PHASE/REC [*EQ/ATT/PHASE], "EQ/ATT" tab page, and make sure that the REC/PLAY key of the channel whose EQ you want to adjust is set to PLAY (key lit green).

(3) Press the appropriate CH SELECT key, and make sure that it is set to "TR."

(4) Set the level meter to "IN/PRE."

(5) Use the ON/OFF button to turn on the EQ.
If this is off, the EQ will not be applied.

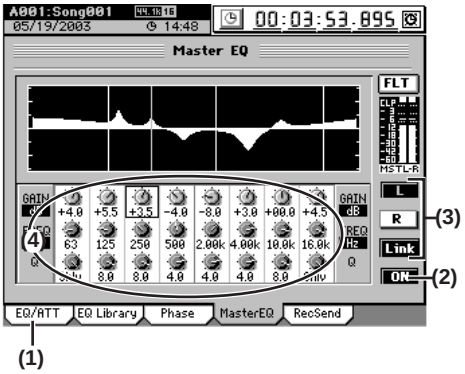
(6) Use the EQ knobs to adjust the EQ. (→p.109 "3d-1. EQ/ATT")

note *If the level meter indicates clipping, select the **ATT** knob icon and adjust it so that clipping does not occur.*

Master EQ

You can use an eight-band full-parametric equalizer to adjust the tone of the master bus.

(1) Access the MIXER, EQ/PHASE/REC [*EQ/ATT/PHASE], "MasterEQ" tab page.



(2) Use the ON/OFF button to turn on the master EQ.
If this is off, the master EQ will not be applied.

(3) Select the channel whose EQ you want to adjust.
Press the **L** button if you want to adjust the tone of the left channel, or press the **R** button to adjust the tone of the right channel.

note *If you press the **Link** button, adjusting the EQ settings of one channel will automatically set the other channel to the same values.*

(4) Select the EQ knob icons, and use the value dial (or the +/– keys) to adjust the master EQ settings. (→p.111 "3d-4. Master EQ")

You cannot use the EQ knobs and keys at the right of the LCD screen to adjust the master EQ.

3-4. EQ library (Storing and recalling EQ settings)

You can store channel EQ settings in the EQ library and recall them as desired.
A total of one hundred EQ settings are available; 50 presets and 50 user-writable settings.

Storing EQ settings

(1) Adjust the EQ settings as desired.
Refer to "Channel EQ" on the previous page.

(2) Access the "EQ Library" tab page, and press the Store button.
The EQ settings that will be stored are the EQ settings of the channel whose **CH SELECT** key is lit.
A name will automatically be assigned to the stored EQ settings; e.g., **CH08-I·EQ** (channel 8 Input EQ) or **CH10-EQ** (channel 10 Track EQ).

(3) If you want to rename the settings, press the Rename button to display the Rename dialog box.
For the renaming procedure, refer to "1-2. Renaming a song" (→p.36).

(4) In the library number cell, select the desired save-destination.
Then press the **Yes** button to save the EQ settings.
If you decide not to save, press the **No** button.

Recalling EQ settings

(1) Access the "EQ Library" tab page, and select (highlight) the EQ settings that you want to use.

(2) Press a CH SELECT key to select the channel for which you want to use these EQ settings.

(3) Press the Recall button to recall the EQ settings.
Verify the recall-destination channel in the **Recall** dialog box, and press the **Yes** button. If you decide not to recall, press the **No** button.

(4) Return to the "EQ/ATT" tab page, check the EQ settings that were recalled, and make adjustments as necessary.

3-5. Pairing

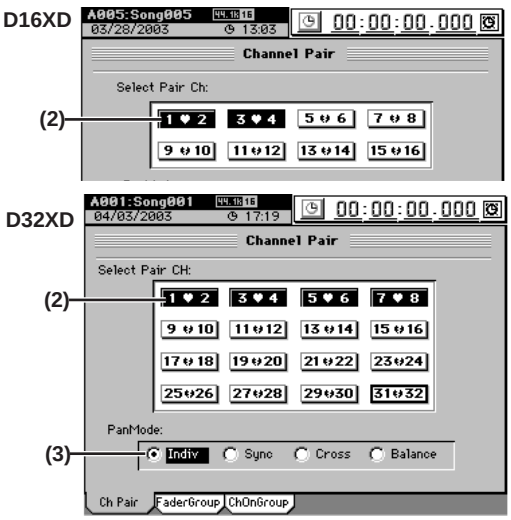
By specifying adjacent odd-numbered and even-numbered channels (1–2, 3–4, 5–6…31–32 [*15–16]) as a pair, you can adjust the values of both channels simultaneously by editing the value of the odd-numbered channel.
This is convenient when you want to adjust the mixer settings for a stereo source or track.
The following settings can be paired.

- **CH ON** key
- **REC/PLAY** key
- **EQ/ATT**
- **REC/EFF/AUX SEND**
- **PAN** knob
- Channel fader

note *You can select how the **PAN** knobs will operate when channels are paired.*

(1) Access the MIXER, PAIR/GROUP [*PAIR], "Ch Pair" tab page.

(2) In Select Pair Ch, select the channels that you want to pair.
Press one of the **"1⇕2"–"31⇕32" [*15⇕16]** buttons to change the symbol to "♥".
If you want to disable pairing, press the paired button to change the symbol to "⇕".



(3) Use the Pan Mode radio buttons to select how the PAN knob will operate for paired channels (→p.102).

3-6. Group settings (D32XD)

On the D32XD, multiple channels can be assigned to a "Group". Operating the fader of any channel assigned to that group will adjust the volume of all channels in the group while maintaining their relative volume balance. This can be extremely useful. As an example, you could assign all the Drum tracks to one group, and use a single fader to bring all the drum tracks up and down in the mix.
In addition to fader groups, you can also assign each channel to a CH ON group. Switching the **CH ON** key of any channel in that group will switch all channels in the group. In this way, if you had three tracks of backing vocals, you could turn all three off with a single key.

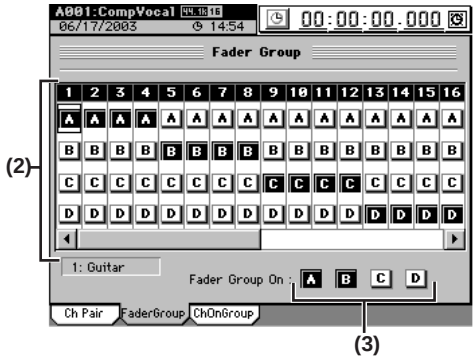
note *Although you can assign the even-numbered channel of two paired channels to a different group than the odd-numbered channel, any subsequent change to the group assignment of the odd-numbered channel will automatically change the group assignment of the even-numbered channel as well.*

Fader groups

(1) Access the MIXER, PAIR/GROUP, "FaderGroup" tab page.

(2) Use the radio buttons to select a group (A–D) for each channel fader.

(3) Use the Fader Group On buttons A–D to enable the desired groups.
You may enable more than one group.

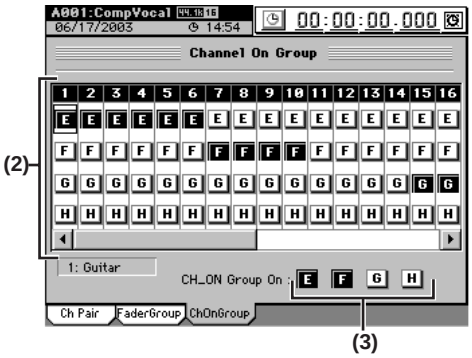


CH ON groups

(1) Access the MIXER, PAIR/GROUP, "ChOnGroup" tab page.

(2) Use the radio buttons to select a group (E–H) for each CH ON button.

(3) Use the Ch On Group On buttons E–H to enable the desired groups.
You may enable more than one group.

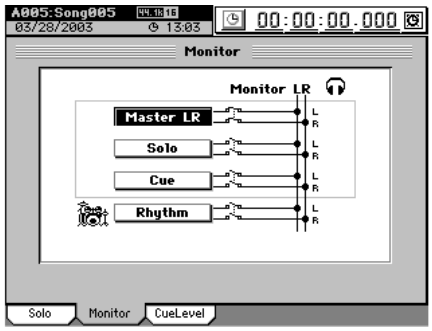

A001:CompVocal
06/17/2003
14:54
00:00:00.000
Channel On Group
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
E E E E E E E E E E E E E E E E
F F F F F F F F F F F F F F F F
G G G G G G G G G G G G G G G G
H H H H H H H H H H H H H H H H
(2)
1: Guitar
CH_ON Group On :
E F G H
(3)
Ch Pair
FaderGroup
ChOnGroup

3-7. Monitor settings

Here's how to select the audio signal that will be output from **MONITOR OUT** and **PHONE**.

(1) Connect your monitor system.
You can either connect amplified speakers or a similar system to the **MONITOR OUT L/R** jacks, or connect headphones to the **PHONES** jack.

(2) Select the monitor source.
Access the **MIXER**, SOLO/MONITOR, **"Monitor"** tab page, and select the source that you want to monitor.



Master LR
Monitor the audio of the master bus.

Solo
Monitor the audio that is being soloed.
When you adjust the settings in the **"Solo"** tab page, the monitor source will be selected automatically.
If you want to defeat this, you can do so in the **"Solo"** tab page (→p.51 "3-9. Solo settings").

Cue
Monitor the volume and pan as set in the cue mix, independent of the channel faders and **PAN** knobs (→p.51 "3-8. Adjusting the cue level").

Rhythm
If this is on, the rhythm sound will be output only from the monitor bus. In this case, the **TEMPO**, **"SetUp"** tab page **Rhythm Assign** setting will be set to **"Monitor."** This is convenient when you want to monitor only the rhythm, such as during a live performance.

note *You can also turn **"Rhythm"** on by setting the **TEMPO**, **"SetUp"** tab page parameter **Rhythm Assign** to **Monitor**.*

(3) Adjust the monitor volume.
The monitor volume is adjusted by the **MONITOR LEVEL** knob for the **MONITOR OUT L/R** jacks, and by the **PHONES VOLUME** knob and **MONITOR LEVEL** for the **PHONES** jacks.

3-8. Adjusting the cue level

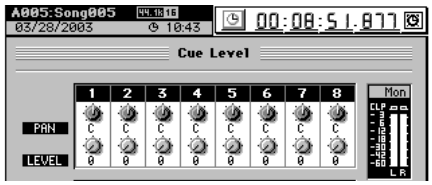
Cue Level is a function that lets you adjust the monitor volume and pan independently of the settings of the master bus. The cue signal is output from the **MONITOR OUT L/R** jacks and the **PHONES** jacks.

(1) Select cue as the source for monitoring.
In the **MIXER**, **SOLO/MONITOR**, **"Monitor"** tab page, select **"Cue"** and turn it on (highlighted).

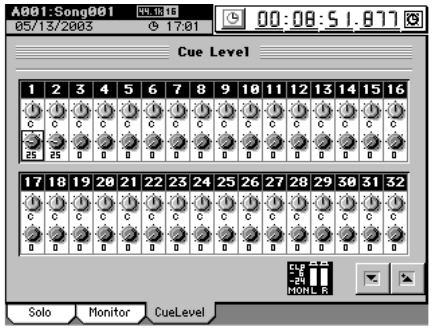
note *If you have made **"Solo"** settings, defeat **"Solo"** before you select Cue.*

(2) Adjust the cue level.
Access the **MIXER**, **SOLO/MONITOR**, **"CueLevel"** tab page. Select the icon for each channel, and use the ▼ / ▲ buttons to adjust the volume level and pan. You can also use the **value dial** or the **+/–** keys to make your selection.

D16XD



D32XD



3-9. Solo settings

Use the Solo function when you want to listen to only a specific channel(s) without affecting the signal being recorded or sent to the MASTER L/R bus. You can also use the solo when you want to listen to one of the Send signals or to one of the Return signals from one of the internal master effects. The solo signal is output from the **MONITOR OUT L/R** jacks and the **PHONES** jacks.

Soloing just one channel

(1) Access the MIXER, SOLO/MONITOR, "Solo" tab page.

(2) Use the Mode radio buttons to select "Last."

(3) Press the CH ON/SOLO mode key to select SOLO mode (key lit orange).
The **CH ON/SOLO** keys of all channels will blink.

(4) Press the CH ON/SOLO key for the channel you want to solo.
The key of the selected channel will continue blinking, and the keys of the other channels will go dark.

(5) Listen to the soloed signal.

As an alternative to using the **CH ON/SOLO** key to select solo, you can press a button in the **MIXER**, **SOLO/MONITOR**, **"Solo"** tab page. This method allows you to select a Send or Return signal for soloing, as well as the signal of a channel (→p.113).

Soloing more than one channel

(1) Access the MIXER, SOLO/MONITOR, "Solo" tab page.

(2) Use the Mode radio buttons to select "Mix."

(3) Use steps (3) and (4) in "Soloing just one channel" (above) to select the channels that you want to solo.

Cancelling solo

(1) Access the MIXER, SOLO/MONITOR, "Solo" tab page, and turn off the button(s) that you selected for soloing.
If you want to clear all solo settings, press the **Clear All** button.

note *You can also cancel Solo by setting the **CH ON/SOLO** mode key to **CH ON** mode.*

(2) Verify the setting.
In the **"Monitor"** tab page, verify that **Solo** is now off.

Sending the soloed audio from the master bus

If you want to, you can send the soloed audio signal to the **MASTER OUT L/R** jacks. Use this when you want to hear the soloed audio through the monitor system connected to the **MASTER OUT L/R** jacks.

In the **MIXER**, **SOLO/MONITOR**, **"Solo"** tab page, turn the **Solo→Master** button on (highlighted).

3-10. Muting a channel

You can use the **CH ON/SOLO** keys to mute individual channels.

(1) Set the CH ON/SOLO mode key to CH ON.
The **CH ON/SOLO** keys of all channels will light.

(2) When you press the CH ON/SOLO key of a channel, it will be muted (the key will be dark).

4. Storing/recalling a scene

You can register frequently-used mixer settings at a desired location and store them as a "scene" for later recall.
After recalling a scene, you can store it again as a new scene, or edit some of the mixer settings and store (overwrite) it back into the same scene memory.

Default Scene is automatically registered at the beginning of the song when you create a new song (→p.36), and always saves the state of the mixer settings at the end of the song.
If automation is off and a scene is not selected, or if automation is on but a scene has not been stored at the beginning of the song, the mixer settings of the default scene will be used, and will appear in the selected scene cell as the current scene.

Since the D32XD uses moving faders, the faders will automatically move to the appropriate positions when you recall a scene. You can view the other parameters in the **SCENE**, **"Mix View"** tab page to see how they have changed.

The faders of the D16XD do not move.

You can store the desired scenes at various locations in the song so that if Automation is turned on, these scenes will be selected automatically when playback reaches the corresponding locations. (→p.54 "5. Automation")

You can store up to one hundred scenes for each song.

A scene can contain the following settings.

Channel parameters
CH ON, Play EQ, ATT, send, insert effect assignment, fader, pan

Effects
Program numbers of the insert effects, master effects, and final effect

Effect return, MASTER fader, AUX level, master EQ

note *MASTER fader settings included in a scene will be valid when playing back the tracks or when recording the master track, but will be ignored when playing back the master track.*

Caution when storing effects in a scene

Scenes contain the effect program numbers.
If you store a scene when you have edited the effect parameters but not stored the effect program, the scene will contain the unedited effect program.
If you edit an effect program, be sure to save the effect program before you store the scene.

4-1. Storing a scene

(1) Adjust the mixer settings.
Adjust the channel faders, PAN knobs, EQ, and effects to the settings that you want to store.

(2) Press the STORE key.
The **Stored Time** dialog box will appear.
If you decide not to store the scene, press the **Exit** button.

note *The scene contains the mixer settings and the location at the point you press the **STORE** key.*

(3) Press the SCENE key to store the scene.
The settings will be stored, and the dialog box will close.

The scenes you store are numbered in ascending order. You can perform steps (2) to store a scene even while the song is being played or recorded.

4-2. Recalling a scene

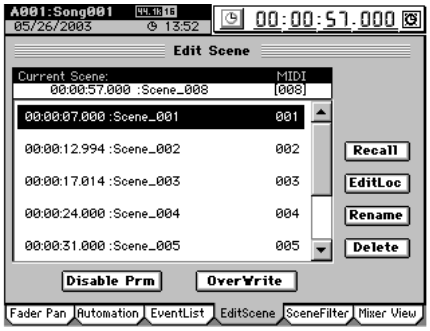
Here's how to recall mixer settings that you registered as a scene.

(1) Access the SCENE, "Automation [*EditScene]" tab page, and turn Automation "OFF."

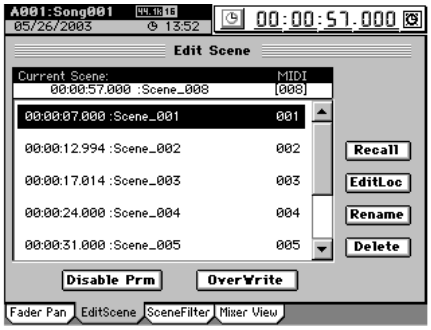
note *If **Automation** is **"ON,"** you will only be able to recall the scene that is registered at the current location.*

(2) In the scene list displayed in "EditScene" tab page, select (highlight) the desired scene, and press the Recall button.
The selected scene will be recalled.

D32XD



D16XD



4-3. Renaming a scene

(1) Access the SCENE, "EditScene" tab page, and select (highlight) the scene you want to rename.

(2) Press the Rename button to display the Rename dialog box.

(3) Edit the name (→p.97).

4-4. Deleting a scene

You can delete an unwanted scene.

Undo is not available for this operation.

(1) Access the SCENE, "EditScene" tab page, and select (highlight) the scene you want to delete.

(2) Press the Delete button to display the Delete Scene dialog box.

(3) Press the Yes button to delete the scene.
If you press the **No** button, you will return to the **"EditScene"** tab page without deleting the scene.

If you want to delete all scenes, press the **Select All** button to turn it on, and then press the **Yes** button to delete all the scenes stored for this song.

4-5. Editing and overwriting a scene

You can edit some of the settings of a scene, and overwrite your changes onto the stored scene.

(1) Recall the scene.
As described in "4-2. Recalling a scene," recall the scene that you want to edit.

(2) Edit the settings of the scene.
Adjust the channel faders, PAN knobs, EQ, and effect parameters to edit the scene.

(3) Press the OverWrite button to display the Over Write Scene dialog box.

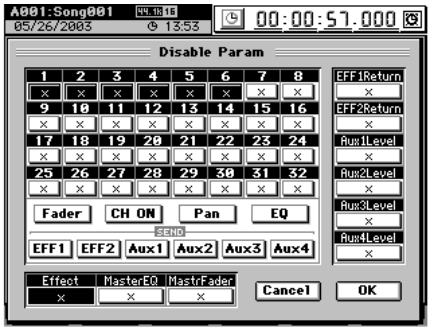
(4) When you press the Yes button, your changes will be overwritten onto the scene of that number.
If you press the **No** button, you will return to the **"EditScene"** tab page without making any changes.

4-6. Specifying parameters that will be disabled for an individual scene

For each scene, you can specify that the settings of certain parameters will not be altered when the scene is recalled. The channel parameters and send settings of the highlighted buttons will be excluded from recall.

(1) Recall the scene.
As described in "4-2. Recalling a scene," recall the scene that you want to edit.

(2) Press the Disable Prm button to display the Disable Param dialog box.



(3) Adjust the settings.
Select the channels whose parameters will be disabled for recall, and select the parameters or sends of those channels that will be disabled.
For the Fader, CH ON, Pan, EQ, EFF 1/2, and AUX 1/2/3/4 [*1/2] parameters, the settings whose buttons are highlighted will be disabled regardless of the channel.

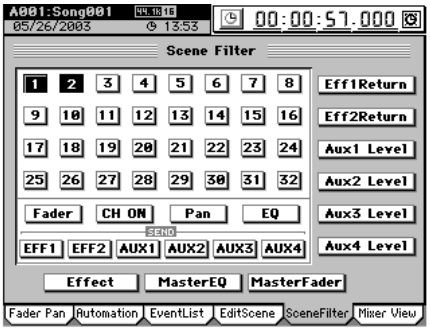
note *Fader, CH ON, Pan, EQ, EFF 1/2, and AUX 1/2/3/4 [*1/2] filter settings apply only to the channels that are disabled (highlighted).*

(4) Press the OK button to close the dialog box.

4-7. Specifying parameters that will be disabled for all scenes

You can specify parameters that will be excluded from scene recall operations for any scene in the song. The channel parameters and sends whose buttons are highlighted in the display will be excluded from (i.e., unaffected by) scene recall operations, regardless of the scene that is recalled.

Access the **SCENE**, **"SceneFilter"** tab page, and press the buttons for the channels and controls for which you want to disable scene recall.
Parameters whose buttons are highlighted will not be recalled.



4-8. Controlling scenes via MIDI

MIDI output

A scene change (program change) message is transmitted when the scene changes.
If the **MIDI/SYNC**, **"MIDI/MMC"** tab page **Program Change** button is on (highlighted), messages will be output in the following cases.

- When you select a scene in the **SCENE**, **"EditScene"** tab page.
- When you press the **STORE** key and **SCENE** key to store a scene.
- If automation (→p.54) is turned on, when the scene changes during playback or recording

MIDI input

If the D32XD/D16XD receives a scene change (program change) message when automation (→p.104, 108) is turned off, it will switch to the scene of the corresponding number.

(1) Connect your external MIDI device (→p.93).

(2) In the MIDI/SYNC, "MIDI/MMC" tab page, set "GlobalCh" to the channel of the external MIDI device that will be transmitting the program change message.
Turn the **MIDI/SYNC**, **"MIDI/MMC"** tab page **Program Change** button on (highlighted).

(3) Access the SCENE, "Automation [*EditScene]" tab page, and turn Automation "OFF."

(4) Send program change messages from your external MIDI device to recall scenes on the D32XD/D16XD.
When the D32XD/D16XD receives program change #0, scene **"001"** will be recalled.
Program change messages #0–99 correspond to scenes **"001"–"100."**

5. Automation

Automation is a function that automatically modifies mixer settings as the song location changes during playback.
The D32XD provides two types of automation; scene automation and event automation.
The D16XD provides scene automation.

If automation is turned on, the D32XD's moving faders will automatically move up and down when you replay the moves saved using event automation, or when you switch to a scene whose fader values differ. Use the **SCENE**, **"MixView"** tab page to see changes that occur in other parameters, or to see fader movements on the D16XD.

5-1. Scene automation

This type of automation automatically switches mixer settings when the song location during playback or recording arrives at the registered location for that scene.

When you register a scene, the location is also registered along with the other settings. When the current location of the song matches the registered location of the scene, the Scene Automation function will automatically select this scene, causing the mixer settings to change to the settings of the scene.

You can also re-register a scene at a different location, or edit the mixer settings of the scene and overwrite it onto the same scene memory.

Using scene automation

Scenes can be set to change automatically, when playback reaches the location where the scene was stored.

note *Store the scene at the location where you want the mixer settings to change (→p.52 "4-1. Storing a scene").*

(1) Access the SCENE, "Automation [*EditScene]" tab page, and turn Automation "ON."
The automation indicator will light.

(2) Play back the song.
Move to the location where you want the playback to start, and press the **PLAY** key.
When playback reaches the location at which the scene was stored, that scene will be recalled.

Storing a scene at a different location

You can recall a stored scene and store it again at a different location.

(1) Recall the scene that contains the mixer settings you want to store again at a different location.
For the procedure, refer to "4-2. Recalling a scene."

(2) Move to the location at which you want to store the scene (→p.38).

(3) Store the scene.
For details, refer to "4-1. Storing a scene."

Editing the location of a stored scene

You can edit the location of a stored scene to change when it will become active during playback.

(1) Access the SCENE, "EditScene" tab page, and select (highlight) the desired scene.

(2) Press the EditLoc button to display the Edit Scene Location dialog box.

(3) Edit the location, and press the Yes button to finalize the change.
If you press the **No** button, you will return to the **"EditScene"** tab page without making any change.

note *You can also change the location in the "**EventList**" tab page.*

5-2. Event automation (D32XD)

This type of automation records mixer operation events such as fader movements or pan motion during playback, and reproduces these operations at the corresponding time during playback or recording.
You can re-record automation events at a different location, or edit and overwrite events.
You can also overwrite events by performing mixer operations during playback/recording.
You can continue recording events until the memory is full. (The remaining event display indicates how much space is left.)
The following operations can be recorded as events.

- Fader operations of each channel
- MASTER fader operations
- CH ON key operations of each channel
- Pan operations of each channel
- AUX send operations of each channel
- Effect send operations of each channel
- Expression pedal operations

The faders will move automatically according to the recorded events ("flying faders").
Even after recording new events, you can use the Undo function to return to the previous state.

Recording mixer operations

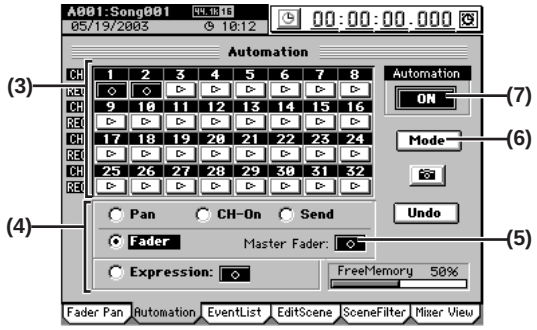
There are two ways to record event automation.
You can overwrite all events from the point where you start song playback/recording until the point where you stop (**Over Write**). Alternatively, you can record only the operations that occur between two specified locations, or only for the region in which you actually operated the faders (**Punch Write**). (→p.104)
As an example, here's how to use **"Over Write"** to record events while the song plays back.

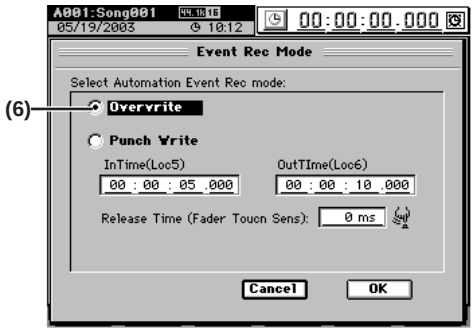
(1) Select the song that you want to use to record mixer operations.

(2) While you play back the beginning of the song, adjust the fader and pan of each channel, and save the settings as a scene.
The scene you save here will be the starting point from which to record the mixer operations.
To use the scene you saved, recall it.

(3) Access the Scene, "Automation" tab page, and select the channels for which you want to record mixer operations.
If you want to record events for a channel, press its button to make it indicate "○".

(4) Use the Pan, CH ON, Send, Fader, and Expression radio buttons to select the type of event you want to record.
You can record only one type of event at a time.





(5) If you selected "Fader," you have the option of also recording Master fader operations.
If desired, press the **Master Fader** button to make it indicate "○".

(6) Press the Mode button to access the Event Rec mode dialog box.
Select "**Overwrite,**" press the **OK** button.

(7) Turn "Automation" ON.
The automation indicator will light.

(8) When you play back the song, event recording will begin.
Adjust the mixer settings for the events you are recording.

(9) When you stop the song, event recording will end.
If you want to additionally record other events in the song, repeat the procedure from step (3).

note *If you made a mistake, you can press the **Undo** button to return to the previous state. If the Undo button is displayed as Redo, you can press it to cancel the Undo.*

Playing back the events

Here's how to play back the recorded events as the song plays.

(1) Select a song that contains recorded events.

(2) Access the SCENE, "Automation" tab page, and select the channels whose events you want to play back.
To make a channel's events play back, press the button to make it indicate "▷".

(3) If you want Master Fader and Expression events to be played back, press the button to make it indicate "▷".

(4) Turn "Automation" ON.
The automation indicator will light.

(5) When you play back the song, the recorded events will play back as the song progresses.

note *If fader events are recorded, the faders will move upward and downward accordingly.*

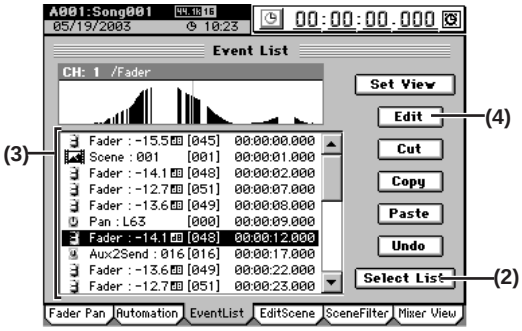
Editing events

You can edit recorded events in either of two ways; by changing the value or location of events in the event list, or by overwriting events in the desired region.

(1) Access the SCENE, "Event List" tab page.

(2) Press the Select List button to open the Select List dialog box. Choose the channel and parameter of the events you want to edit, and press the OK button.

*If you select **Master Fader**, your selection of channel and parameters other than Scene will be cancelled.*



(3) In the event list, select the event that you want to edit.
If you want the events of the event list to be shown in the Event View area, press the **Set View** button and use the **Set View** dialog box to select the desired parameter (→p.104).

(4) Press the Edit button to open the Edit Event dialog box.
The parameter, value, and location of the selected event will be displayed in detail.

- Use the **value dial** (or **+/–** keys) to select (highlight) the item you want to edit.

If a scene is selected, you can edit only the location.

In this screen as well, you can select the move cell ↕ and use the **value dial** (or **+/–** keys) to change the event being edited.

(5) Press the OK button to execute the edit and update the event list.
If you decide not to execute, press the **Cancel** button.

Cut, copy, or paste an event

You can use the **Cut**, **Copy**, or **Paste** buttons to cut, copy, or paste the selected event.
For details on these operations, refer to the Reference manual, "3c-3. Event List" (→p.104).

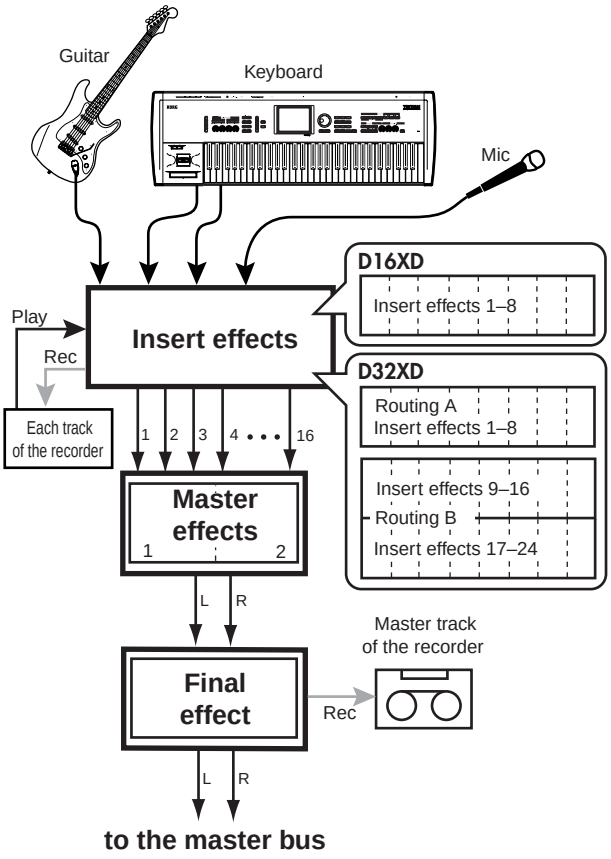
Effects

The D32XD/D16XD provides up to twenty-four [*eight] insert effects that you can insert into mixer channels, up to two master effects that can process the sends from each channel, and one final effect to process the master bus.

The D32XD provides two effect routes; **"Routing A"** and **"Routing B."**
"Routing A" consists of insert effects 1–8, master effects 1 and 2, and a final effect.
"Routing B" consists of insert effects 9–24.

The D16XD provides one route, consisting of insert effects 1–8, master effects 1 and 2, and a final effect.

The number of simultaneously available effects will be different for a 96 kHz/24-bit song (→"How DSP power is allocated to the effects").



The effect programs are common to all of the above types of effect. There are 128 preset effect programs.
Each effect program is constructed from one of 52 different effect algorithms.
There are 128 user effect programs in which you can store your own edited settings, and 32 song effect programs for each song, in which you can store effect settings for that specific song.

note *Each song can store its own 32 song effect programs.*

You cannot rewrite the preset effect programs. However, a preset effect can be recalled, edited and stored to a user program.

Effect type and size

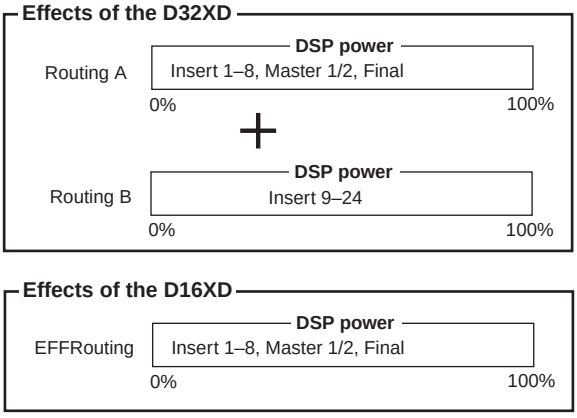
There are two types of effect program: stereo and mono. You can use either type of program as an insert effect, but mono programs cannot be used as master effects or as the final effect.

Insert effect 8 cannot use a stereo effect program.

Effect programs come in various different sizes. The size of an effect program will determine how much DSP power it uses. The total DSP power available for all of the effects is divided up into 32 [*16] "blocks." The number of blocks of DSP power used by an effect program is referred to as the Effect Size - size-1, size-2, etc. As an example, the type of effect programs that can be used to provide 24 [*eight] simultaneous insert effects are called "size-1" programs. Relative to this, other more complex effect programs are categorized as "size-2" or "size-4" programs.
The size of each effect program is shown by an icon "1" displayed at the right of the effect name.

How DSP power is allocated to the effects

On the D32XD/D16XD, the term "DSP power" refers to the total processing capability that can be used to process effect programs.



D32XD

You can use a total of up to 27 effects (the total of insert, master, and final effects). However, you are limited to simultaneously using no more than 16 effects within Routing A and no more than 16 effects within Routing B (if the song's sampling frequency is 44.1 or 48 kHz). This means that the available number of effects will depend on the combination of effect sizes.
There is enough DSP power to process "16 sizes-worth" of effect programs each for Routing A and Routing B. However for a 96 kHz/24-bit song, the DSP power will process only "8 sizes-worth" of effect programs for each routing.
A total of eleven effects can be used within Routing A, and a total of sixteen within Routing B.
A specific amount of DSP power is allocated to the insert, master, and final effects, and the breakdown for each type of effect is shown in the following table.

Number of effects and DSP power for each variety of effect

Variety	Maximum number of effects that can be used simultaneously Routing A + Routing B	Maximum size assignable to one effect
Insert	8 + 16	8
Master	2 + 0	4
Final	1 + 0	4
Total	11 + 16	16 + 16 (8 +8)*

* For a 96 kHz/24-bit song, the maximum total size is 8 + 8.

i.e. *If you use a size-8 effect for insert effect 1, insert effects 2–8 will be unavailable. Use Routing B insert effects 9–24.*

i.e. *If you use a size-8 effect for insert effect 8, the master and final effects will not be available. So that the master effects and final effects will be available, select the size-8 effect for Routing B insert effect 9, and select a size-1 effect for insert effect 8.*

When you make effect assignments, pay attention to the DSP power indicator in the **"Routing A"** or **"Routing B"** tab pages.

For details, refer to "Effects that can be used simultaneously" (→p.117, 118) in the reference section.

D16XD

There is enough DSP power to process "16 sizes-worth" of effect programs (for a 44.1/48 kHz song). However for a 96 kHz/24-bit song, the DSP power will process only "8 sizes-worth" of effect programs.
A total of eleven effects can be used by insert, master, and final effects, but since the sum of the all the effect sizes is limited to no more than 16 (for a 44.1/48 kHz song), the number of effects that can be used simultaneously will change, depending on the combination of effect sizes.
A specific amount of DSP power is allocated to the insert, master, and final effects, and the breakdown for each variety of effect is shown in the following table.

Number of effects and DSP power for each variety of effect

Variety	Maximum number of effects that can be used simultaneously	Maximum size assignable to one effect
Insert	8	8
Master	2	4
Final	1	4
Total	11	16 (8)*

* For a 96 kHz/24-bit song, the maximum total size is 8.

i.e. *If you use a size-8 effect for insert effect 1, insert effects 2–8 will be unavailable.*
If you use a size-4 effect for master effect 1, master effect 2 will be unavailable.

When assigning effects, pay attention to the DSP power indicator in the **"EFFRouting"** tab page to see how much DSP power is available.

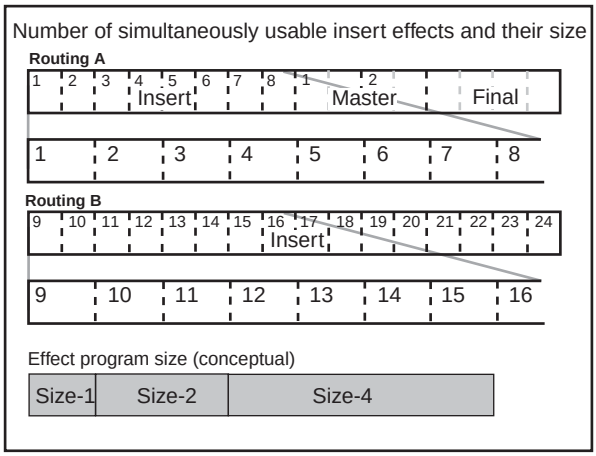
For details, refer to "Effects that can be used simultaneously" (→p.121) in the reference section.

1. Using insert effects

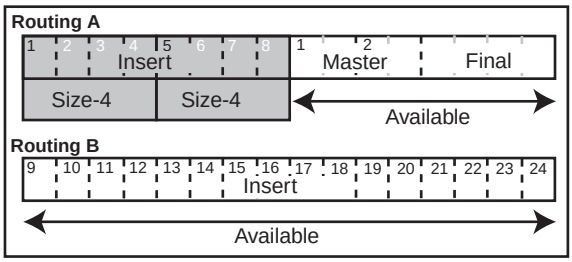
You use insert effects by inserting them into a mixer channel to process the sound of an input source or audio track.

D32XD

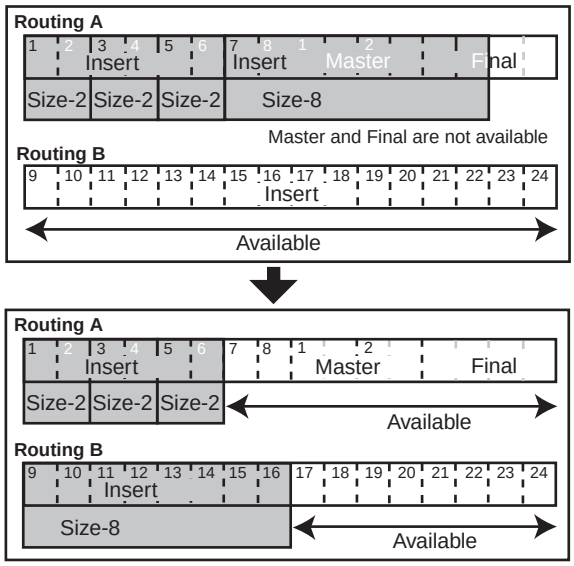
You can use a maximum of 24 insert effects simultaneously. In Routing A, you can use a total of 8 sizes-worth of insert effect if you are using the master and final effects.
Since Routing B is only for insert effects, you can use up to a total of 16 sizes-worth of effects.



i.e. *If you use a size-4 effect for insert effect 1, and a size-4 effect for insert effect 5, you will be able to use the master and final effects, as well as sixteen insert effects (9–24) in Routing B.*



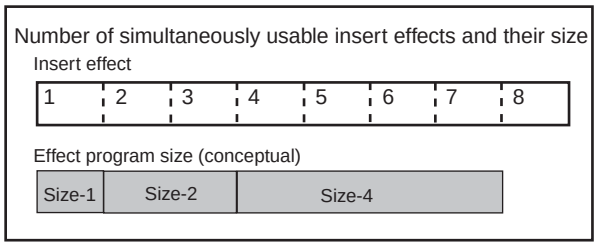
i.e. *If you use size-2 effects for insert effects 1, 3, and 5, and a size-8 effect for insert effect 7, you will be able to use sixteen insert effects (9–24) in Routing B but will not be able to use the Routing A master effects and final effect. In such cases, you should assign the size-8 effect to Routing B insert effect 9, and not assign an effect to insert effect 7; this way, the master effects and final effect will also be available.*



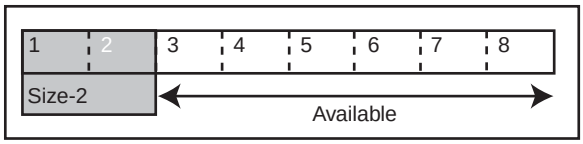
For a 96 kHz/24-bit song, the DSP power is limited to 8 sizes-worth for Routing A and 8 sizes-worth for Routing B; this limits the number of effects you can use. (→p.56 "How DSP power is allocated to the effects")

D16XD

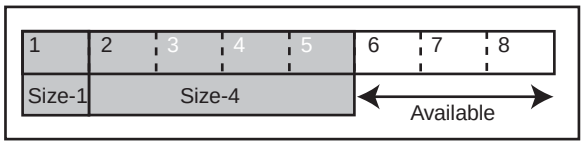
A maximum of eight insert effects can be used simultaneously, and these effect programs may have a total size of no more than 8. In other words, you must assign effect programs so that their total size stays within this limit.



i.e. *If you use a size-2 effect for insert effect 1, only six more insert effects (3–8) will be available.*



i.e. *If you use a size-1 effect for insert effect 1, and a size-4 effect for insert effect 2, only three more insert effects (6–8) will be available.*



In the case of a 96 kHz/24-bit song, the DSP power will process only "8 sizes-worth" of effect programs, so the number of programs useable for each effect will be limited. (→p.56 "How DSP power is allocated to the effects")

1-1. Applying insert effects during recording

You can apply an insert effect to an audio input source connected to the input jack, to the audio being input from the internal CD-R/RW drive, or from the built-in rhythm sounds, and record the sound processed by the effect.

For details on how to apply an insert effect on a channel input, refer to Quick Start. (→p.24)

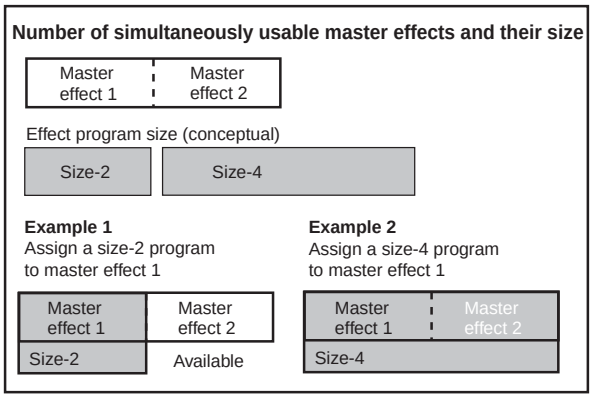
1-2. Applying insert effects during playback

You can apply an insert effect to the playback of a previously-recorded track.

For details on how to apply an insert effect to the track playback, refer to Quick Start. (→p.29)

2. Using master effects

To use a master effect, adjust the send level of each channel to send some of its signal to the effect. The master effects are typically used to apply reverb or to make the overall mix richer and better balanced.
The D32XD/D16XD provides two master effects (MstEFF1 and MstEFF2), and these can be used simultaneously. However if you use a size-4 effect, the available processing power of both master effects will be used, so only the master effect 1 settings will be applied.



To adjust the depth of the effect, adjust the send level from each channel.
AUX send is used when applying external effects.

You can select an effect program for the master effect in the **EFFECT**, **"MstrEFF1"/"MstrEFF2"** or the **EFFECT**, **"Routing A [*EFFRouting]"** tab page.

For details on how to use the master effects, refer to Quick Start. (→p.30)

3. Using the final effect

The D32XD/D16XD provides one stereo-in/stereo-out final effect, which is applied to the master bus.

The final effect is used mainly with a dynamics-type effect program (such as compression) to adjust the overall level for mastering.

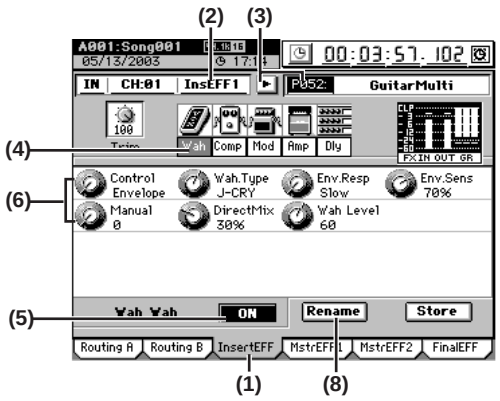
You can select an effect program for the final effect in the **EFFECT**, **"FinalEFF"** or the **EFFECT**, **"Routing A [*EFFRouting]"** tab page.

For details on how to use the final effects, refer to Quick Start. (→p.32)

4. Editing the effects

You can edit the effect programs used by the insert effects, master effects, and final effect.

Editing the effect parameters



For an insert effect

(1) Access the EFFECT, "InsertEFF" tab page.

(2) Select the insert effect (InsEFF1–24 [*8]) that you want to edit.
Press the insert effect cell (highlighted), and use the **value dial** (or the **+/–** keys) to select an insert effect 1–24 [*8].

(3) The effect program assigned to the selected insert effect will appear. Below it, icons will show the algorithm used by that program.
To select a different program, press the popup button and make your selection.

(4) If the algorithm contains more than one effect icon, press the cell below the icon you want to edit (it will become highlighted), and a list of the parameters for that effect will be displayed.
If the program consists of only one effect, the displayed parameters are all that exist.

(5) Listen to the effect settings.
When you turn the **ON/OFF** button **OFF**, the effect will be bypassed, and the effect icon(s) will be grayed-out. When you turn the button **ON**, the effect will be applied. This way, you can listen to the difference that the effect makes and listen to the original sound as a reference.

(6) Use the control knobs located below the LCD screen to edit the parameter values.

- To edit the value of a parameter, turn the control knob of the location corresponding to that knob icon.
- To edit the second or lower row of parameter values, press a knob icon in that row to select it. Now the four control knobs will correspond to that row.

(7) If the program consists of two or more effects, select the icon of the effect that you want to edit, and edit its parameters in the same way.

(8) Assign a name to the effect program that you edited.

- Press the **Rename** button to access the **Rename** dialog box. (→p.36 "1-2. Renaming a song")
- After you have assigned the desired name, press the **Yes** button.

For a master effect or final effect

(1) Access the EFFECT, "MstrEFF1" (or "MstrEFF2")/ "FinalEFF1" tab page.

(2) Perform steps (3) and following of "For an insert effect," above.

Storing an effect program

- If the song is playing, press the **STOP** key.
- Press the **Store** button in the effect tab page to display the **Store Program** dialog box.
- Press the **Area** list button and select either User or Song from the list.
  U (User): User effect program. You can store 128 effect programs which are shared by all songs.
  S (Song): Song effect program. You can store 32 effect programs for each song.
- Press the number cell to specify the store-destination (it will be highlighted), use the **value dial** (or the **+/–** keys) to select the number, and then press the **OK** button to store the effect program.

note *When you store the effect program, it will overwrite and replace any data that had been stored in that number.*

5. Controlling effects from an external device

You can use an expression pedal or external MIDI controller to control the D32XD/D16XD's effects in realtime. For details on the effect parameters that you can control, refer to "Effect parameter" (→p.152–).

For a 96 kHz/24-bit song, you cannot control effects from an external device.

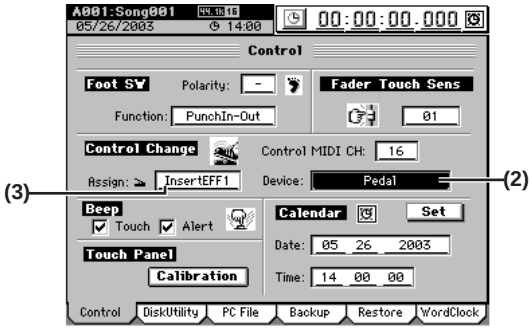
You cannot control insert effects 9–24 of the D32XD from an external device.

i.e. Using a pedal or MIDI to control an effect.

(1) Connect an expression pedal such as the EXP-2 foot controller (sold separately) or an external MIDI controller (→p.12).

(2) Access the SYSTEM, "Control" tab page.
In this example we will use a pedal to control the effect. In the **Effect Control** area, set the **Device** cell to **"Pedal."**

note *If you want to use MIDI to control the effect (rather than using the pedal as in this example), you must specify the type of MIDI message that you want to use. Access the **SYSTEM**, "**Control**" tab page, and set "**Control MIDI CH**" to the MIDI channel on which that your external MIDI device is transmitting.*



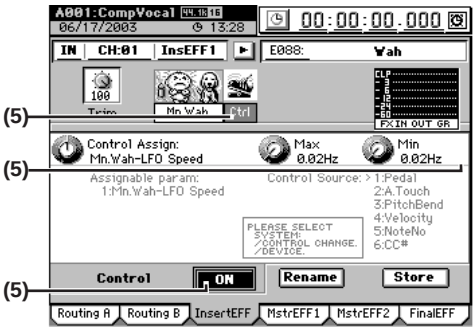
(3) Select the effect that you want to control.
In the **Assign** field, select the effect (**Insert EFF1...8/Master EFF 1, 2/Final EFF**) that you want to control.

(4) Select the effect program that you want to control.
Press the **EFFECT** key for the effect you chose in step (3), and select an effect program in the appropriate tab page.

(5) Specify the parameter and range that you want to control.

- A control icon will be added at the end of the effect chain of the selected program. Press (highlight) this control icon to display the control-related parameters.
- Turn **"Control"** on.
- Use the effect knobs to specify the range.

note *If you want to save these settings, store the program as described on "Save Now" (→p.137).*



(6) Operate your expression pedal or external MIDI controller to control the effect parameter you specified.

6. Using external effects

You can output an effect send signal from the **AUX OUT** jacks and use an external effect processor to apply effects. Then connect the output of your external effect processor to the **INPUT 1–8** jacks and return the effect signal to the master bus.

i.e. Sending the playback signal to an external effect processor, and using INPUT 3 and INPUT 4 jacks to return it to the master bus

(1) Connect your external effect processor.
Connect one of the D32XD/D16XD's **AUX OUT** jacks to the INPUT jack of your external effect processor, and connect the OUTPUT jacks of the effect processor to the D32XD/D16XD's **INPUT 3** jack and **INPUT 4** jack.

(2) Send the playback signal to the external effect.

- Access the **MIXER**, **SEND (EFF/AUX** [*/**REC**]), **"Aux-Send"** tab page.
- Select the knob icon of the channel that you want to send to the external effect, and use the ▼ / ▲ buttons to adjust it.
- Press the button located above the knob icon to select either pre-fader (PRE) or post-fader (PST) as the location from which the signal will be sent to AUX.

(3) Input the audio signal from the external effect processor.

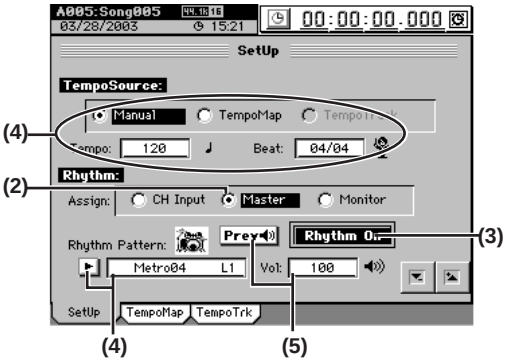
- Access the **MIXER**, **INPUT/OUTPUT/CH ASSIGN**, **"SubMix 1-8"** tab page.
- Adjust the **"Level"** of each channel to set the return level, and adjust the **"Pan"** to set the return pan (→p.101).

Rhythm

The D32XD/D16XD contains 265 different rhythm patterns (→p.185 "Rhythm Pattern List").
You can use these rhythms as a guide, or join several rhythm patterns to create the drum track for an entire song.

1. Selecting and playing rhythms

(1) Access the TEMPO, "SetUp" tab page.



(2) Adjust the settings so that the rhythm sound will be output from the master bus.
In the **Rhythm** area, set **Assign** to **"Master."**

(3) Turn the Rhythm On button on (highlighted).

(4) Specify the tempo, time signature, and rhythm pattern.

- For this example, use the **Tempo Source** radio buttons to select **"Manual."**
- Select (highlight) the **"Beat"** cell, and use the ▼ / ▲ buttons to specify the time signature.
- Select (highlight) the **"Rhythm Pattern"** cell, and use the ▼ / ▲ buttons to select the rhythm pattern you want to use.

note *You can also press the popup button and choose from a list.*

- Select (highlight) the **"Tempo"** cell, and use the ▼ / ▲ buttons to adjust the tempo.

(5) Listen to the rhythm pattern.

- Press the **Prev** button (highlighted) to preview the selected rhythm pattern.
- Set the master fader to an appropriate position.
- Select (highlight) the **Rhythm "Vol"** edit cell, and use the ▼ / ▲ buttons to adjust the volume.

note *Instead of the ▼ / ▲ buttons, you can also use the **value dial** or the **+/–** keys to adjust the setting.*

2. Listening to the rhythm while recording a performance

You can listen to a rhythm pattern as a guide while recording a performance.

You cannot simultaneously record the rhythm using the procedure described below.

(1) Adjust the settings as described in "1. Selecting and playing rhythms."

(2) Adjust the settings so that you can hear the rhythm from your monitor system.
In the **Rhythm** area, use the **Assign** radio buttons to select **"Monitor."**

(3) Connect your input device or instrument, and begin recording a performance.
For details, refer to "1. Inputting audio to the mixer" (→p.42). The rhythm will begin sounding when you press the **REC** key to enter the record-ready state. Recording will begin when you press the **PLAY** key. Play your instrument along with the rhythm that you hear.

3. Recording the rhythm

Here's how to record the D32XD/D16XD's internal rhythm pattern onto a track.

i.e. Recording the rhythm pattern on tracks 1 and 2

(1) Adjust the settings for recording.

- Turn the **Rhythm On** button on (highlighted).
- In the **Rhythm** area, set **Assign** to **"CH Input."**
- Select (highlight) the **Rhythm "Vol"** edit cell, and use the ▼ / ▲ buttons to set the volume to **"100."**

(2) Specify the input channels.

- Access the **MIXER**, **INPUT/OUTPUT/CH ASSIGN**, **"Ch Assign"** tab page.
- Using the ▼ / ▲ buttons, set the **CH1 SOURCE** cell to **"L"** (), and the **CH2 SOURCE** cell to **"R"** ().

(3) Record.
For details, refer to "1-1. Basic recording" (→p.64).
The rhythm will begin sounding when you press the **REC** key to enter the record-ready state. Recording will begin when you press the **PLAY** key.

note *Instead of the ▼ / ▲ buttons, you can also use the **value dial** or the **+/–** keys to adjust the setting.*

4. Setting the tempo

On the D32XD/D16XD you can specify the tempo three different ways: manual tempo, tempo map, and tempo track.

As an alternative to playing the entire song at the same tempo, you can change the tempo during the song, or synchronize the tempo to an external MIDI device.

Manual tempo

Here's how to set the tempo for the entire song, as specified by the rhythm pattern setting.

(1) Select manual as the tempo source, and adjust the rhythm settings.

- Access the **TEMPO**, **"SetUp"** tab page.
- Use the **Tempo Source** radio buttons to select **"Manual."**
- For details, refer to "1. Selecting and playing rhythms" (→p.61).

(2) When you press the PLAY key to play back the song, the rhythm pattern will sound at the specified tempo.

Tempo map

Tempo maps let you change the tempo, time signature, and rhythm pattern at various measures throughout the song.

By using tempo maps to change rhythm patterns, you can create a drum track for the entire song, including an intro, breaks, fill-ins, and an ending.

note *If you want to record the audio of the rhythm played by the tempo map you create here, refer to "3. Recording the rhythm" (→p.61).*

(1) Select the tempo map as the tempo source.

- Access the **TEMPO**, **"SetUp"** tab page.
- Use the **Tempo Source** radio buttons to select **"Tempo Map."**

(2) Specify tempo map "001" at the beginning of the song.

- Access the **TEMPO**, **"TempoMap"** tab page.
- From the **"Tempo Map"** list, select (highlight) tempo map **"001:..."**

note *Tempo map **"001"** sets the tempo at the beginning of the song, and tempo maps **"002"**–**"200"** can be used to change the tempo at subsequent measures.*

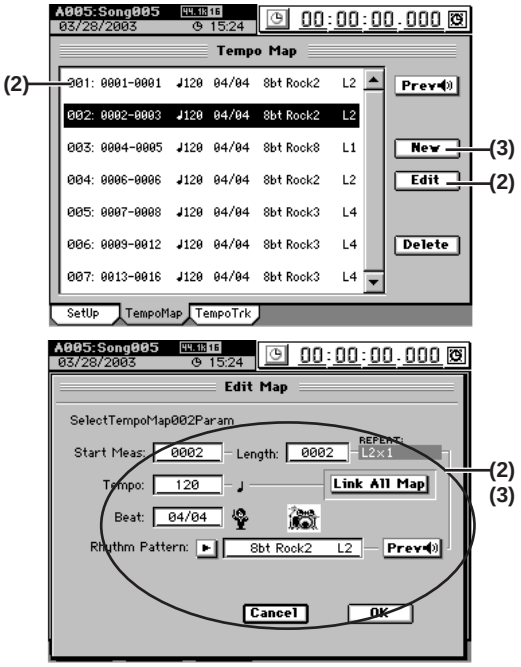
- Press the **Edit** button to display the **Edit Map** dialog box.
- Set the **Tempo** cell to the desired tempo, the **Beat** cell to the desired time signature, and select the desired rhythm pattern in the **Rhythm Pattern** cell.
- You can press the **Prev** button to listen to the rhythm pattern.

note *If you press the **Link All Map** button, all tempo settings of the tempo map events you created will be changed to match the current tempo.*

- Use the **Length** cell to specify the number of measures that tempo map event **"001"** will continue.

note *The starting measure of tempo map **"001"** cannot be changed from measure **"001."***

- When you have finished adjusting your settings, press the **OK** button.



(3) If you want to change the tempo, time signature, or rhythm pattern during the song, you can add a new tempo map event.

- Press the **New** button to display the **New Map** dialog box.
- Specify the tempo in the **Tempo** cell, the time signature in the **Beat** cell, and the rhythm pattern in the **Rhythm Pattern** cell.
- Insert tempo map event **"002,"** and use the **Length** cell to specify the starting measure and number of measures.
- Press the **OK** button to add the new tempo map event. When you add a tempo map event, the tempo map numbers will be renumbered in sequence starting from the beginning of the song.
- By adding tempo map events to switch rhythm patterns, you can put together patterns to create a drum patterns for an entire song, with intro, fill-in, and ending.
- You can preview a rhythm pattern by pressing the **Prev** button.

(4) Listen to the tempo map you created.
For details, refer to steps (1) through (3) of "1. Selecting and playing rhythms" (→p.61)
Move to the beginning of the song, and press the **PLAY** key to play back the song. The rhythm pattern and tempo will change according to the tempo maps that you created.

Editing a tempo map

If you increase the number of measures, the measure numbers of subsequent tempo maps will also increase by the corresponding length. If you decrease the number of measures, the measure numbers of subsequent tempo maps will decrease by the corresponding length.

(1) Select the tempo map event that you want to edit.
Access the **TEMPO**, **"TempoMap"** tab page, and select (highlight) the tempo map event you want to edit.

(2) Edit the settings.

- Press the **Edit** button to display the **Edit Map** dialog box.
- Edit the parameters as desired, and press the **OK** button.

(3) Verify that the settings are correct.

- Access the **TEMPO**, **"TempoMap"** tab page to check the tempo map.

Inserting a rhythm pattern by adding a tempo map event

To create a new tempo map event, access the **New Map** dialog box and press the **Insert** button to turn it on (highlighted).
This will insert a tempo map event at the specified measure. The measure number locations of subsequent tempo map events will be moved backward by the corresponding number of measures.

(1) Verify the location at which you want to insert the tempo map event.
Access the **TEMPO**, **"TempoMap"** tab page, and verify the current tempo map event. In this example, we will insert a tempo map event at the beginning.

(2) Create the new tempo map event.

- Press the **New** button to display the **New Map** dialog box.
- Set the parameters.
- Press the **Insert** button to turn it on (highlighted), and then press the **OK** button.

(3) Verify that the tempo map event was inserted as you intended.
Access the **TEMPO**, **"TempoMap"** tab page, and check the tempo map.

Overwriting a tempo map event

If you want to add a tempo map event to switch rhythm patterns, make sure that the **Insert** button is turned off in the **New Map** dialog box before you create the new tempo map event.
In this case, the tempo map event of the specified measures will be added, but the overall number of measures will not change.

(1) Verify the location at which you want to overwrite the existing tempo map event.
Access the **TEMPO**, **"TempoMap"** tab page, and check the existing tempo map.

(2) Create a new tempo map event.

- Press the **New** button to display the **New Map** dialog box.
- Set the parameters.

(3) Verify that the tempo map event was replaced as you intended.
Access the **TEMPO**, **"TempoMap"** tab page, and check the tempo map.

Deleting a tempo map

The tempo maps located after the deleted tempo map will be shifted toward the beginning of the song by the number of measures that were deleted.

This operation cannot be undone.

(1) Select the tempo map event that you want to delete.
Access the **TEMPO**, **"TempoMap"** tab page, and select (highlight) the tempo map event that you want to delete.

(2) Delete the tempo map event.

- Press the **Delete** button. A dialog box will ask you to confirm the operation.
- Press the **Yes** button to delete the selected tempo map event.

note *If you turn on the **Select All** button, all tempo map events other than tempo map event **"001"** will be deleted, and the settings of tempo map event **"001"** will be initialized.*

(3) Verify that the tempo map event was deleted as you intended.
Access the **TEMPO**, **"TempoMap"** tab page, and check the tempo map.

If you want to edit the settings, press the **Edit** button to display the **Edit Map** dialog box, and edit the parameters as desired.

Tempo track

You can record MIDI Clock data or Tap Tempo data on the tempo track, and use the tempo track to control the tempo of the song.

Recording MIDI Clock data from an external MIDI sequencer, and using it as the tempo track

MIDI Clock data from an external MIDI sequencer can be recorded as tempo data on the tempo track.
You can use this when you want to synchronize a D32XD/D16XD song with song data created on a MIDI sequencer in which the tempo changes continuously.

note *If MIDI Clock data was not received correctly from your MIDI sequencer, recording may stop in the middle of the song.*

(1) Specify the time signature of the song.
If the time signature of the song data created on your MIDI sequencer changes during the song, create a new tempo map that begins where the time signature changes. (→p.62)

Tempo settings will play back in synchronization, but measures will become incorrectly aligned if the time signature changes do not match.

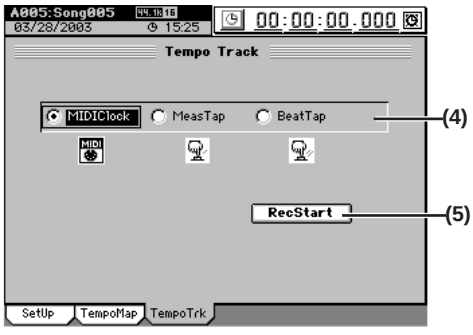
(2) Connect the MIDI OUT connector of your MIDI sequencer to the D32XD/D16XD's MIDI IN connector.

(3) Set your MIDI sequencer so that it will transmit MIDI Clock messages.
Refer to the owner's manual of your MIDI sequencer.

(4) Specify how you want to record the tempo.
Access the **TEMPO**, **"TempoTrk"** tab page, and choose **"MIDI Clock."**

(5) Record MIDI Clock data.

- Press the **RecStart** button to put the D32XD/D16XD in the record-ready state.
- Start your MIDI sequencer.
- When the D32XD/D16XD starts receiving MIDI Clock data from your MIDI sequencer, it will indicate **"Receiving MIDI Clock."**



(6) When your MIDI sequencer finishes playing, stop the MIDI sequencer.
When the D32XD/D16XD finishes recording, it will indicate **"Complete."** Press the **OK** button.

(7) Check the tempo source.
When you record the tempo track, the **TEMPO, "SetUp"** tab page **Tempo Source** will automatically be set to **"TempoTrk."**

Tap tempo

You can record the tempo track by pressing (tapping) the **PLAY** key at the beginning of each measure or on each beat while the song plays.

note *You can use a PS-1 foot switch (sold separately) instead of the **PLAY** key (→p.126).*

Tap tempo lets you record the tempo track after a song has already been recorded. If you record the tempo for a song for which you did not originally specify the tempo, you will be able to do the following things.

- Edit tracks in units of measures
- Connect and synchronize external MIDI devices

(1) Specify the time signature of the song.
If the time signature changes during the song, create a tempo map at the location where the time signature changes.

Tempo settings will play back in synchronization, but measures will become incorrectly aligned if the time signature changes do not match.

(2) If you want to use a foot switch to input the tap tempo, connect an optional PS-1 foot switch to the FOOT SWITCH jack of the D32XD/D16XD.

(3) Specify how you want to record the tempo.
Access the **TEMPO**, **"TempoTrk"** tab page, and choose **"MeasTap"** (tap at the beginning of each measure) or **"BeatTap"** (tap on each beat).

(4) Record the tap tempo track.

- Press the **RecStart** button to put the D32XD/D16XD in record-ready mode. Tap tempo will be recorded from the beginning of the song.
- When you press the **PLAY** key or a connected foot switch, the song will begin playing, and tap tempo recording will also begin.
- While you listen to the playback, record the tap tempo by pressing the **PLAY** key or foot switch at the intervals you specified in step (4). The counter will be displayed while you record the tap tempo.

*When using the **PLAY** key to record tap tempo, do not strike the key any more forcefully than necessary. Doing so may damage the hard disk etc.*

(5) After you have input the last tap, press the STOP key.
For example if you are inputting four measures of a 4/4 time signature, tap four times in the case of **"MeasTap"** or sixteen times in the case of **"BeatTap"** to input up to the beginning of the fifth measure. Then press the **STOP** key.
If you input taps only until mid-way through the song, the tempo of the last-input measure or beat will be automatically copied to the end of the song.

(6) Check the tempo source.
When you record the tempo track, the **TEMPO**, **"SetUp"** tab page **Tempo Source** will automatically be set to **"TempoTrk."**
Move to the beginning of the song, press the **PLAY** key to play back, and check the tempo.

Recorder

The D32XD/D16XD has 32 [*16] channel tracks for each song. For each channel track, there are eight virtual tracks; A through H.

The D32XD/D16XD provides a separate master track for each song, and this master also has eight virtual tracks; A through H.

This is a two-channel track that is used for recording the final stereo mix of your song. If you want to create an audio CD, the data on the master track will be used.
The following table shows the number of available tracks and the number of tracks that can be used simultaneously.

Number of simultaneously usable tracks for each Song Type

Song Type	Recording	Playback	Punch recording
44.1 kHz/16-bit	16	32 [*16]	8
48 kHz/16-bit			
44.1 kHz/24-bit	8	16	4
48 kHz/24-bit			
96 kHz/24-bit	4	8	2

1. Recording

The D32XD/D16XD's recorder can record analog or digital audio input sources assigned to mixer channels. Several types of recording are provided, as described below.
You can also mix your song down to a two-track stereo mix, and record it on the master track.

1-1. Basic recording

Here's how to record the audio signal that you specified in "1. Inputting audio to the mixer" (→p.42).

note *If you want to create a new song for recording, set refer to "1-1. Creating a new song" (→p.36).*

(1) Create a new song (→p.36 "1-1. Creating a new song").

(2) Adjust the mixer settings (→p.42 "1. Inputting audio to the mixer").

(3) Apply effects to the audio input (→p.56 "Effects").

(4) Apply EQ to the audio input (→p.48 "Applying EQ to an audio input").

(5) Adjust the pan (→p.48 "3-2. Adjusting the pan").

(6) Check the recording mode.
Access the **REC/PLAY MODE**, **"Rec/Play"** tab page, and set **Rec Mode** to **"Normal."**

(7) Set the recording level.
You can set the recording level in one of two ways.

- You can record at the optimum level simply by recording at the level you specified in steps (1) through (4). Press the **REC** button to set it to **"PRE"** in the **CH VIEW**, **"Ch View"** tab page.
- If you want to further adjust the channel fader and record at the adjusted level, set the **REC** button to **"PST"** in the **CH VIEW**, **"Ch View"** tab page.

note *With the **PRE** setting, the channel fader will send the input signal to the master bus, setting the monitor level. With the **PST** setting, the send level to the master bus will be the same as the recording level.*

note *You can also make this setting in the **MIXER**, **EQ/PHASE/REC** [*__SEND (EFF/AUX/REC)__], **"Rec Send"** tab page.*

(8) Move to the location where you want to start recording. (→p.38)

(9) Put the D32XD/D16XD in record-ready condition.
Press the **REC** key (**REC** and **PLAY** keys will blink).

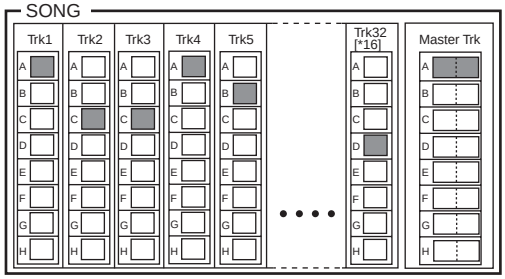
(10) Start recording.
Press the **PLAY** key (**REC** and **PLAY** keys will light). Perform the part to be recorded.

(11) Stop recording.
When you have finished performing, press the **STOP** key (**REC** and **PLAY** keys will go dark). Return to the location at which you started recording, set the **REC/PLAY** key of the tracks you recorded to PLAY (key lit green). Play back, and verify that your performance was recorded correctly.

note *The ATT setting in the **"EQ/ATT"** (or **"Ch View"**) tab page is common to recording and playback. If you have turned down ATT substantially for recording, you may need to adjust it for playback.*

1-2. Switching virtual tracks

Each song contains up to 32 [*16] tracks and one master track. In addition, each track has eight "virtual tracks," labelled A–H.
When you record or play back, you can specify which of these virtual tracks A–H will be used.
This means that you can switch between virtual tracks to record multiple "takes" of a performance, and then choose the best take.

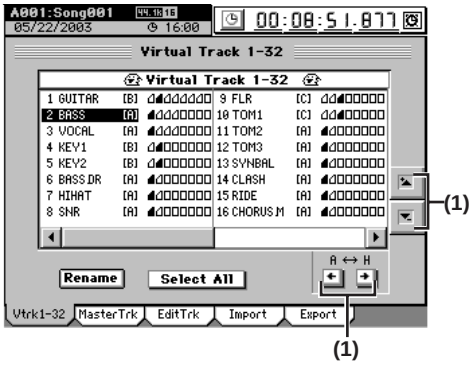


(1) Select the desired virtual track.
In the **TRACK**, **"Vtrk1–32 [*Vtrk1–16]"** tab page, use the ▼ / ▲ buttons to select the track that you want to record, and then use the **"V-Level"** ←→ buttons (or the **value dial** or **+/–** keys) to select the virtual track.

*In the case of a 96 kHz/24-bit song, the **"Vtrk1–32 [*Vtrk1–16]"** tab will be named **"Vtrk1–8."***

*For a 44.1 kHz/24-bit or a 48 kHz/24-bit song on the D32XD, the **"Vtrk 1–32"** tab page will be named **"Vtrk 1–16."***

note *If a virtual track already contains recorded data, this is graphically indicated by "■" as shown in the illustration.*



(2) Record.
For details, refer to "1-1. Basic recording," steps (2)–(11).

1-3. Recording additional tracks while you play back (Overdubbing)

Here's how to record additional performances while you listen to the playback of previously-recorded tracks.

(1) Prepare for recording.
Refer to "1-1. Basic recording" (→p.64), steps (1)–(7).

(2) Select the tracks that you want to play back.
Press the **REC/PLAY** key of the tracks you want to play back, to set them to PLAY (key lit green).

(3) Select the track(s) that you want to record.
Press the **REC/PLAY** key of the tracks you want to record, to set them to REC (key lit red).

(4) Mute the tracks that you will not be using.
Set the **CH ON/SOLO** mode key to CH ON.
Press the **CH ON/SOLO** keys to turn off (key unlit) the tracks that you are not playing or recording, so that these tracks will be muted.

(5) Record.
Refer to "1-1. Basic recording" (→p.64), steps (8)–(11).

1-4. Trigger recording

Trigger recording is a function that automatically starts recording when the input signal level exceeds a specified value.

Trigger/RecStart

Recording will start when the input signal level exceeds the specified value.

*You will not be able to execute recording if **MIDI SYNC** is set to **MTC**.*

Trigger/Punch In

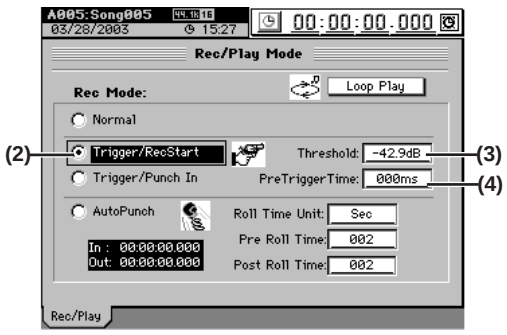
When the input level exceeds the specified threshold value while the song is playing, the recorder will switch from playback to recording.

(1) Prepare for recording.
Refer to "1-1. Basic recording" (→p.64), steps (1)–(5).

(2) Adjust the settings for trigger recording.
Access the **REC/PLAY MODE**, **"Rec/Play"** tab page, and choose either **"Trigger/RecStart"** or **"Trigger/Punch In"** (the TRIGGER LED will light).

(3) Specify the input signal level ("Threshold") at which recording will begin.

(4) If you want recording to begin from a time slightly earlier than the moment that the input signal exceeds the "Threshold" (i.e., so that the attack is recorded), you can set the "PreTriggerTime."
Trigger recording will cause recording to start when the threshold is exceeded, but the PreTriggerTime lets you prevent the attack of the first note from being cut off.



(5) Press the REC key to put the D32XD/D16XD in record-ready condition.

Trigger/RecStart
The **REC** key and **PLAY** key will blink.

Trigger/Punch In
The **REC** key will blink.

(6) Begin recording.

Trigger/RecStart
When the input signal exceeds the threshold level, recording and playback will start automatically (**REC** and **PLAY** keys will light).

Trigger/Punch In
Press the **PLAY** key to start playback (the **REC** key will blink, and the **PLAY** key will light). At the location that you want to record, begin performing on your instrument. When the input signal exceeds the threshold level, recording will start automatically (**REC** and **PLAY** keys will light).

(7) When you have finished performing, press the STOP key to stop.
("1-1. Basic recording" (→p.64), step (10))

1-5. Re-recording a specific area (Punch-in/out)

If you made a mistake in a recorded performance, or are not satisfied with a portion of the performance, you can use "punch-in/out" recording to fix just that portion without having to record the entire part over again. Punch-in/out recording can be done manually or automatically

Punch-in: Switches from the playback mode to the record mode.
Punch-out: Switches from the record mode back to the playback mode.

Manual punch-in/out

Here's how to punch-in and punch-out manually.
During playback, press the **REC** key or an optional PS-1 foot switch to begin recording, and then press the **REC** key, **PLAY** key, or foot switch to stop recording.

(1) Prepare to record.
Refer to "1-1. Basic recording" (→p.64), steps (1)–(8).

(2) Adjust the playback level.
If you want to hear the recorded sound before and after the punch-in/out region, access the **MIXER**, **SOLO/MONITOR**, **"Monitor"** tab page, and turn **"Cue"** on. Then go to the **"CueLevel"** tab page, and adjust the **"LEVEL"** of the track that you want to re-record (→p.51).

(3) Move the location to a point earlier than the point where you want to start recording. (→p.38)

(4) Press the PLAY key to begin playback (the PLAY key will light).
The song will play back, and you will hear the sound of the playback tracks as well as the sound of the track you will be re-recording.

(5) When you reach the point that you want to re-record, press the REC key. (The REC and PLAY keys will light.)
Recording will begin (manual punch-in), and you can re-record your performance.

(6) When you reach the point at which you want to stop re-recording, press the REC key or the PLAY key. (The REC key will go dark.)
Recording will stop (manual punch-out), and normal playback will resume. By repeating steps (5) and (6), you can re-record more than one section in one pass.

(7) Press the STOP key to stop. (The PLAY key will go dark.)
After you stop recording, move the location to a point earlier than where you began recording, and play back to verify that the re-recording is satisfactory.

Using a foot switch for manual punch-in/out

You can switch between playback and recording by pressing a PS-1 foot switch (sold separately).
This lets you punch-in/out while you perform, or when the D32XD/D16XD is located at a distance.

(1) Connect a foot switch to the FOOT SWITCH jack.

(2) Access the SYSTEM, "Control" tab page, and specify the function of the foot switch.
Set **"Function"** to **"PunchIn-Out."**

*If you are using the PS-1 foot switch, make sure that **"Polarity"** is set to **"–"** (→p.126).*

(3) Perform manual punch-in/out recording.
Follow the procedure described in "Manual punch-in/out." When doing so, you can press the foot switch at steps (5) and (6) to switch between punch-in and punch-out.

Auto punch-in/out

Here's how to punch-in and punch-out automatically at the locations you specify beforehand.

*You will not be able to execute recording if **MIDI SYNC** is set to **MTC**.*

(1) Prepare to record.
Refer to "1-1. Basic recording" (→p.64), steps (1)–(5) and (7).

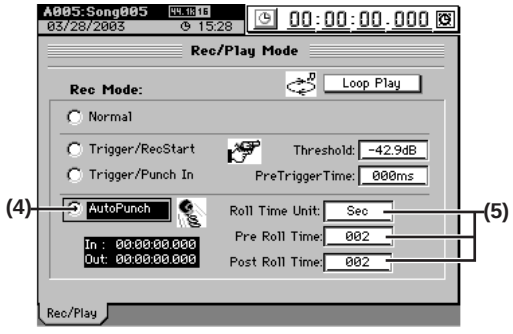
(2) Set the playback level.
If you want to hear the recorded sound before and after the region you are re-recording, access the **MIXER**, **SOLO/MONITOR**, **"Monitor"** tab page, and turn **"Cue"** on. Then go to the **"CueLevel"** tab page, and adjust the **"LEVEL"** of the track that you want to re-record (→p.51).

(3) Store the location at which you want to start recording in the IN (punch-in) locate point, and store the location at which you want to stop recording in the OUT (punch-out) locate point.
For details on setting the IN and OUT locations, refer to "Assigning locations to the Locate keys" (→p.38).

(4) Access the REC/PLAY MODE, "Rec/Play" tab page, select the Auto Punch button, and turn on the auto punch-in/out function.
The **AUTO PUNCH** indicator will light.

(5) Specify the playback region before and after recording.

- Set **"Roll Time Unit"** to the desired unit: **"Sec"** (seconds) or **"Meas"** (measures).
- Set **"Pre Roll Time"** to specify the length of playback that will occur before recording begins.
- Set **"Post Roll Time"** to specify the length of playback that will occur after recording ends.



(6) Begin recording.

- When you press the **REC** key, the recorder will move to a location earlier than the punch-in point, as specified by the pre-roll time, and will enter the record-ready state (**REC** key blinking).
- When you press the **PLAY** key, playback will begin. Playback will continue during the pre-roll time, and then recording will occur from the specified punch-in point (IN). (The **REC** and **PLAY** keys will light.)

(7) Stop recording.

- When you reach the punch-out point (OUT), recording will end and playback will resume. (The **REC** key will be dark and the **PLAY** key will be lit.)
- When the post-roll time ends, the recorder will stop.

(8) Verify the content that was recorded.
Move to a location earlier than where you began recording (IN), and play back to verify that the recording is satisfactory.

Loop recording

When using punch-in/out recording, you can turn the **Loop Play** button on so that recording will occur repeatedly over the IN–OUT region. When you are finished recording, you can use the Undo/Redo functions to compare different takes, and keep the best one.

(1) Adjust the settings for auto punch-in/out.
Refer to "Auto punch-in/out" (→p.66) steps (1)–(5).

(2) Press the Loop Play button to turn it on (highlighted).
The Loop indicator will light.

(3) Begin recording.

- When you press the **REC** key, you will move to a point ahead of the specified IN (recording start) location as set by the pre-roll time, and the D32XD/D16XD will be in record-ready condition (**REC** key blinking).
- When you press the **PLAY** key, playback will begin (**PLAY** key will light).
  Playback will continue for the pre-roll time, and recording will begin at the IN point. (The **REC** key will light.)
- Recording will end when you reach the OUT point, and playback will continue for the post-roll time. (The **REC** key will go dark.)
- Then you will move to the pre-roll time, and the same process will be repeated.
- To stop, press the **STOP** key at a point outside the recording region (IN–OUT).

(4) Use the Undo/Redo function to compare the takes, and select the best one.

- Press the **UNDO** key to display the **"Undo/Redo"** tab page.
  The **"Undo/Redo"** tab page displays the most recent recording (Level 00) and the previous recordings (Level "loop-recorded takes minus 1") together with the Rec Track (track number).

  *Loop recordings appear in the list as "**Record Track**," just as conventional recordings.*
- In the **"Undo/Redo"** tab page, use the **Undo** button and **Redo** button to select a recorded take. The selected performance will be recalled.

(5) Listen to the recorded performance.

- Press the **PLAY** button to play back, and listen to the recording. If **"LoopPlay"** is on, the region between the IN (beginning of recording) and OUT (end of recording) points will continuously play back.
- Repeat this process to select the best performance.

The data in the list lets you go back through the most recent sixteen levels.

1-6. Creating a master track

After applying effects and EQ to each track to create the overall balance of your song, you can then apply effects and EQ to the entire song to make the volume and tone consistent, and record the resulting two-track stereo mix onto the "master track."
The master track data you create here can also be copied to a channel track (→p.75).

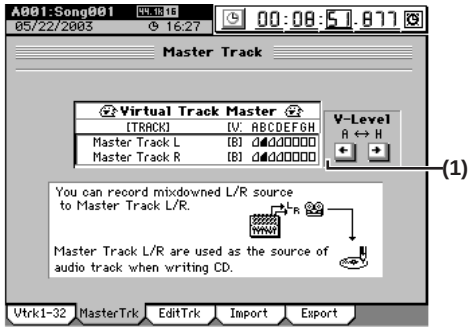
After recording or track editing, you can use the Undo function to return to the state prior to recording or editing (→p.147).

If you recorded on a different virtual track, check the virtual track that is selected after executing Undo.

i.e. Mixing down the audio of tracks 1–32 [*16] and recording a master track for a 44.1 kHz/16-bit song

(1) Select the virtual tracks that you want to use in your final mix.

- For each channel track, select the virtual track that you want to include in the mix that will be recorded onto the master track (→p.65).
- Select a virtual track for the master track.



(2) Set the MASTER TRACK STATUS.

- Press the master track **MASTER TRACK STATUS** key to select record mode (key lit red). All channel tracks will automatically be set to play (key lit green).
- Use the **CH ON/SOLO** keys to turn off (key unlit) any channels that you do not want to be recorded to the master track.

(3) Apply insert effects (→p.57).

(4) Apply EQ (→p.48).

(5) Adjust the pan (→p.48).

(6) Apply master effects (→p.58).

(7) Apply a final effect (→p.58).

(8) Apply master EQ (→p.48).

(9) Set the recording mode.
Access the **REC/PLAY MODE**, **"Rec/Play"** tab page, and set **Rec Mode** to **"Normal."**

(10) Adjust the recording level.

- Set the master fader to unity gain (0 dB).
- Play back the song.
- Use the faders to adjust the level of each channel to create the desired volume balance for your song. The sound will be recorded onto the master track at these levels.

If the sound of the master track is clipping (distorting), lower the master fader.

(11) Return to the beginning of the song (→p.38).

If you are creating an album CD project, the beginning of the master track will be the beginning of the CD track.

(12)Begin recording.

- Press the **REC** key to enter record-ready condition, and then press the **PLAY** key to begin recording.
- When you are finished recording, press the **STOP** key to stop recording.

(13)Listen to the recorded result.

- Press the master track **MASTER TRACK STATUS** key to set it to **PLAY** (key lit green). All channel tracks will automatically be muted (the **REC/PLAY** keys will go dark).
- Move to the beginning of the song, and press the **PLAY** key to hear the playback.
- Press the **STOP** key to stop.

Bounce recording

Bounce recording is a way to combine the data from multiple tracks down to just one or two tracks. This is useful in creating "submixes" that free up additional tracks for recording. By using the Master Track of the D32XD/D16XD as the bounce record destination, you can perform bounce recording while keeping the original tracks intact. To perform bounce recording, just play back the tracks you want to bounce, and record them onto the master track.
After listening to the Bounced data on the Master Track and verifying that it is correct, simply copy (overwrite) the master track to any of the real tracks or virtual tracks. (→p.144)

2. Playback

This section explains the basic methods of playback used in the D32XD/D16XD.

2-1. Normal playback

(1) Select the track(s) that you want to play back.
Set the **CH ON/SOLO** mode key to CH ON (key lit green).
For each track that you want to play back, set the **CH ON/SOLO** key to CH ON (key lit).
For each track that you want to play back, press the **REC/PLAY** key to select PLAY (key lit green).

(2) Move to the location at which you want to start playback (→p.38).

(3) Press the PLAY key to begin playback (the PLAY key will light).

(4) Apply insert effects (→p.57).

(5) Apply EQ (→p.48).

(6) Adjust the pan (→p.48).

(7) Apply master effects (→p.58).

(8) Apply a final effect (→p.58).

(9) Apply master EQ (→p.49).

(10)Press the STOP key to stop playback (the PLAY key will go dark).

note *In order to play back the master track, you must set the master track **MASTER TRACK STATUS** key to PLAY (key lit green).*

note *Playback will continue until you press the **STOP** key, even if you pass the end of the audio data that actually exists.*

note *You can use a PS-1 foot switch (sold separately) to start and stop playback (→p.126).*

2-2. Loop playback

Here's how you can repeatedly play back the region between the IN–OUT points of a song. This is a useful way to check the content of that region. You can also use loop playback in conjunction with auto-punch recording (→p.67).

(1) Select the track(s) that you want to play back.
For details, refer to "2-1. Normal playback" step (1), above.

(2) Specify the region (IN–OUT) that you want to loop (→p.38).

(3) Access the REC/PLAY MODE, "Rec/Play" tab page, and turn the Loop Play button on (highlighted).

(4) Play back the loop.
When you press the **PLAY** key, playback will start from the IN location, and will repeatedly play the IN–OUT region.

During loop playback, it may take several seconds to move from OUT to IN.

(5) Press the STOP key to stop playback (the PLAY key will go dark).

2-3. Playing back an album CD project

An album CD project lets you arrange songs in a desired order for playback. You can then record the output onto a DAT, MD, or cassette tape recorder.

i.e. Using the Album CD Project function to play back songs in a specified order and record them on an external recorder

(1) Use the Album CD Project function to specify the songs that you want to play back.
For details, refer to Album CD Project steps (1)–(4) (→p.79).

When using Album CD Project, playback will stop if you move to a different screen.

(2) Connect your external recorder.
Connect your external recorder to the D32XD/D16XD's **MASTER OUT LR** jacks or **S/P DIF OUT** jack.

(3) Record the output on your external recording device.

- Press the play button to play back the album CD project, and adjust the recording level on your external recording device.
- Return to the beginning of the album CD project, start recording on your external recording device, and then press the D32XD/D16XD's play button.

3. Track editing

You can use track editing commands to copy a track, insert blank space, erase a track, delete a track, reverse a track, optimize a track, exchange tracks, expand/compress a track, copy an entire track, exchange two entire tracks, create a fade-in/fade-out, or normalize the level.

In some cases, track editing may not be possible if there is insufficient space on the song drive. You will need to allocate enough free space for the track editing operation.

Registering the edit region

Specify the edit region by storing the appropriate points in the **LOC1/IN** through **LOC4/END** keys.

LOC1/IN key: IN point

LOC2/OUT key: OUT point

LOC3/TO key: TO point

LOC4/END key: END point

Use the counter or the **FF**, **REW** keys to move to the location you want to edit.
Press the **STORE** key, and then press either **LOC1/IN**, **LOC2/OUT**, **LOC3/TO**, or **LOC4/END** to store the location in that key. The location is stored the moment you press the key.
For details, refer to "Assigning locations to the Locate keys" (→p.38).

If you want to specify a location more precisely while viewing the waveform, press the Wave button in one of the editing screens, and use the Wave dialog box (→p.139).

3-1. Track editing procedures

Copy a track (CopyTrk)

This command copies the specified region (IN–OUT) of track data to another location (TO).

- The IN–OUT region can be copied once, or multiple times in succession.
- You can copy data from one track, or from multiple tracks simultaneously.
- By using the clipboard, you can copy track data to a different song.

Here are some ways in which you can use this command.

- Repeatedly copy a phrase of several measures (such as a drum pattern) to create a track that extends the entire length of song.
- Copy the first verse of a song to create the second verse.
- Record a favorite phrase from a track, and copy it to a different track.

Copying tracks within the same song

i.e. Copying the IN–OUT region of track 1 three times to the TO location of track 2

*Select the virtual tracks of the copy-source (**Source**) and copy-destination (**Destination**) before you make settings for this Copy operation.*

(1) Specify the region that you want to copy.
Set the following locations to specify the region for copying.

- Set the IN point to specify the beginning of the region to be copied
- Set the OUT point to specify the end of the region to be copied
- Set the TO point to specify the beginning of the copy-destination

(2) Select "CopyTrk."
In the **TRACK**, **"EditTrk"** tab page, press the **Edit Trk Type** cell. In the **Edit Trk Type** dialog box, choose **"Copy Trk"** and press the **OK** button.

(3) Select the copy mode.
Press the **Mode** button. In the **Copy Mode** dialog box, select the desired mode and press the **OK** button.

OverWrite: The track data existing at the copy-destination will be overwritten.

Insert: The copied data will be inserted; subsequent existing data will be moved toward the end of the song.

(4) Select the copy-source track number.

- For the **Source** cell, select track **"1".**
- Check the IN and OUT locations. If you want to set the locations with more precision, press the **Source Wave** button, and use the **Wave** dialog box (→p.139) to set the location.

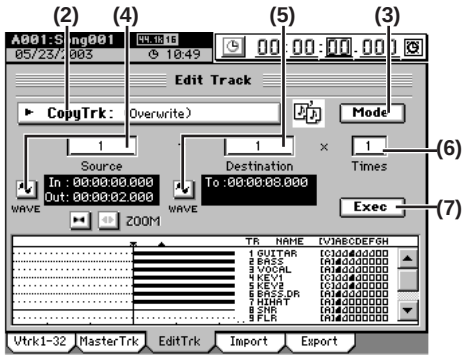
(5) Select the copy-destination track number.

- For the **Destination** cell, select track **"2".**

note *If you specified two or more tracks as the "**Source,**" you must specify the same number of tracks in "**Destination.**"*

- Verify that the TO location is correct. If you want to set the location with more precision, press the **Destination Wave** button, and make your settings in the **Wave** dialog box (→p.139).

(6) Specify the number of time that you want to copy the data.
In the **Times** cell, specify the number of copies as **"3".**



(7) Execute the editing operation.
Press the **Exec.** button. Then in the **CopyTrk** dialog box, press the **Yes** button to execute the operation.
When the operation is finished, the display will indicate **"Completed."** Press the **OK** button.

(8) Check the results of the editing operation.
Press the **LOC3/TO** key, and play back from the TO location to verify that the data was copied correctly.
If you are not satisfied with the results, you can use Undo to return to the previous state. (→p.147)

Using the clipboard to copy data to another song

When you use the clipboard to copy data between tracks of songs that have a different sampling frequency and/or bit depth, the sampling frequency and/or bit depth will be converted automatically. You can specify whether dithering will be performed to make quantization noise less obtrusive when converting 24-bit data to 16-bit data.

If the sampling frequency of the song copied to the clipboard is different from that of the copy-destination song, a certain amount of time will be required for the conversion to be performed.

i.e. Copying the IN–OUT region of track 1 once from the 48 kHz/24-bit song number 001 to the TO location of track 2 of the 44.1 kHz/16-bit song number 002

*Before you make these copy settings, verify that the correct virtual tracks are selected for the copy-source (**Source**) and copy-destination (**Destination**).*

(1) Select song 001 (→p.37 "1-3. Selecting a song").

(2) Specify the region that you want to copy.
Set the following locations to specify the region for copying (→p.69).

- Set the IN point to specify the beginning of the region to be copied
- Set the OUT point to specify the end of the region to be copied

(3) Select "CopyTrk."
In the **TRACK**, **"EditTrk"** tab page, press the **Edit Trk Type** cell. In the **Edit Trk Type** dialog box, choose **"CopyTrk"** and press the **OK** button.

(4) Select the copy-source track number.

- For the **Source** cell, select track **"1".**
- Check the IN and OUT locations. If you want to set the locations with more precision, press the **Source Wave** button, and use the **Wave** dialog box (→p.139) to set the location.

(5) Select the clipboard as the copy-destination track number.
For the **Destination** cell, select track **"Clip."**

(6) Execute the copy.
Refer to step (7) of "Copying tracks within the same song."

note *Any data currently in the clipboard will be overwritten.*

(7) Select song 002 (→p.37 "1-3. Selecting a song").

(8) Register the TO location. (→p.69)
Verify that the TO location is correct. If you want to set the location with more precision, press the **Destination Wave** button, and make your settings in the **Wave** dialog box (→p.139).

(9) Select "CopyTrk."
In the **TRACK**, **"EditTrk"** tab page, press the **Edit Trk Type** cell.
In the **Edit Trk Type** dialog box, choose **"CopyTrk"** and press the **OK** button.

(10) Select the copy mode.
Press the **Mode** button. In the **Copy Mode** dialog box, select the desired mode and press the **OK** button.

OverWrite: The track data existing at the copy-destination will be overwritten.

Insert: The copied data will be inserted; subsequent existing data will be moved toward the end of the song.

(11) Select the clipboard as the copy-source track number.
For the **Source** cell, select track **"Clip1."** The number indicates the number of tracks in the clipboard.

(12) Select the copy-destination track number.
Set the **Destination** cell to track **"2".**

(13) Specify the number of times that the data will be copied.
Set the **Times** cell to **"1".**

note *If you specified two or more tracks as the "**Source,**" you must specify the same number of tracks as the "**Destination.**"*

(14) Execute the operation.
Press the **Exec.** button to display the **CopyTrk** dialog box. If you want dithering to be performed, turn on the **Dither** button.
Press the **Yes** button to execute the operation.
When the operation is finished, the display will indicate **"Completed."** Press the **OK** button.

(15) Check the results of the editing operation.
Press the **LOC3/TO** key, and play back from the TO location to verify that the data was copied correctly.
If you are not satisfied with the results, you can use Undo to return to the previous state. (→p.147)

Insert blank space (InsertTrk)

This command inserts blank space into the specified region (IN–OUT) of a recorded track. Track data following the inserted space will be shifted toward the end of the song.

- You can insert space into one or more tracks simultaneously.
- For example, if you want to add a phrase in the middle of a recorded performance, insert a space of the appropriate length, and then record into that area.

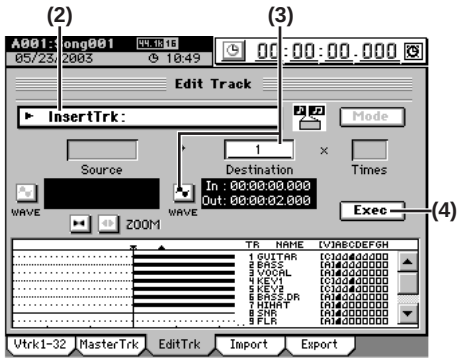
i.e. Inserting blank space into the IN–OUT region of track 1

*Before you make settings for this operation, check the virtual track of the **Destination** track into which you will insert blank space.*

(1) Specify the region into which you want to insert blank space.
Set the following locations to specify the region for blank space (→p.69).
- Set the IN point to specify the beginning of the blank space.
- Set the OUT point to specify the end of the blank space.

(2) Select "InsertTrk."
In the **TRACK**, **"EditTrk"** tab page, press the **Edit Trk Type** cell. In the **Edit Trk Type** dialog box, choose **"InsertTrk"** and press the **OK** button.

(3) Select the track number into which you want to insert blank space.
- For the **Destination** cell, select track **"1".**
- Check the IN and OUT locations. If you want to set the locations with more precision, press the **Destination Wave** button, and use the **Wave** dialog box (→p.139) to set the location.



(4) Execute the editing operation.
Press the **Exec.** button. Then in the **InsertTrk** dialog box, press the **Yes** button to execute the operation.
When the operation is finished, the display will indicate **"Completed."** Press the **OK** button.

(5) Check the results of the editing operation.
Press the **LOC1/IN** key, and play back from the IN location to verify that the editing operation has done correctly.
If you are not satisfied with the results, you can use Undo to return to the previous state. (→p.147)

Erase a track (EraseTrk)

This command erases track data from the specified region (IN–OUT) of a track. The region will become blank.
Unlike the "Delete Track" command described on the following page, this Erase Track command will not cause the data located following the OUT point to move forward.

- You can erase data from the IN–OUT region of one or more tracks simultaneously.

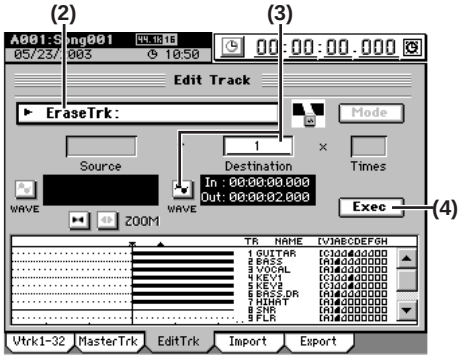
i.e. Erasing the IN–OUT region of track 1

*Before you make settings for this operation, check the virtual track of the **Destination** track from which you will be erasing data.*

(1) Specify the region whose data you want to erase.
Set the following locations to specify the region for erasing (→p.69).
- Set the IN point to specify the beginning of the region to be erased.
- Set the OUT point to specify the end of the region to be erased.

(2) Select "EraseTrk."
In the **TRACK**, **"EditTrk"** tab page, press the **Edit Trk Type** cell. In the **Edit Trk Type** dialog box, choose **"EraseTrk"** and press the **OK** button.

(3) Select the track number from which you want to erase data.
- For the **Destination** cell, select track **"1".**
- Check the IN and OUT locations. If you want to set the locations with more precision, press the **Destination Wave** button, and use the **Wave** dialog box (→p.139) to set the location.



(4) Execute the editing operation.
Press the **Exec.** button. Then in the **EraseTrk** dialog box, press the **Yes** button to execute the operation.
When the operation is finished, the display will indicate **"Completed."** Press the **OK** button.

(5) Check the results of the editing operation.
Press the **LOC1/IN** key, and play back from the IN location to verify that the editing operation has done correctly.
If you are not satisfied with the results, you can use Undo to return to the previous state. (→p.147)

Delete a track (DeleteTrk)

This command deletes the specified region (IN–OUT) of a track. When an area is deleted, the subsequent data (following the OUT point) will be shifted toward the beginning of the song.

- You can delete data from the IN–OUT region of one or more tracks simultaneously.

Deleting track data

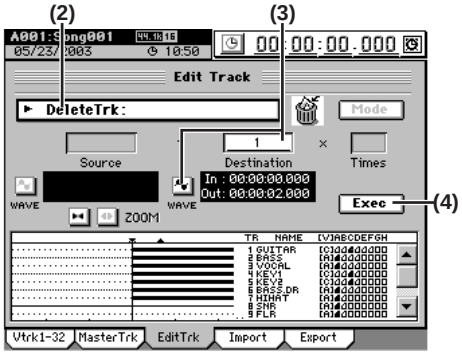
i.e. Deleting the IN–OUT region of track 1

*Before you make settings for this operation, check the virtual track of the **Destination** track from which you will be deleting data.*

(1) Specify the region whose data you want to delete.
Set the following locations to specify the region for deleting (→p.69).
- Set the IN point to specify the beginning of the region to be deleted.
- Set the OUT point to specify the end of the region to be deleted.

(2) Select "DeleteTrk."
In the **TRACK**, **"EditTrk"** tab page, press the **Edit Trk Type** cell. In the **Edit Trk Type** dialog box, choose **"DeleteTrk"** and press the **OK** button.

(3) Select the track number from which you want to delete data.
- For the **Destination** cell, select track **"1"**.
- Check the IN and OUT locations. If you want to set the locations with more precision, press the **Destination Wave** button, and use the **Wave** dialog box (→p.139) to set the location.



(4) Execute the editing operation.
Press the **Exec.** button. Then in the **DeleteTrk** dialog box, press the **Yes** button to execute the operation.
When the operation is finished, the display will indicate **"Completed."** Press the **OK** button.

(5) Check the results of the editing operation.
Press the **LOC1/IN** key, and play back from the IN location to verify that the editing operation has done correctly.
If you are not satisfied with the results, you can use Undo to return to the previous state. (→p.147)

Deleting all data of a track

(1) In the TRACK, "Vtrk1–32 [*Vtrk1–16]" tab page, verify that the track you want to delete contains data.

(2) Specify the region whose data you want to delete.
Set the locations as follows (→p.69).
- Set the IN location to the beginning of the song.
- Set the OUT location to the end of the song.

(3) Execute steps (2)–(5) of "Deleting track data," above.

Exchange tracks (SwapTrk)

This command exchanges (swaps) recorded track data between the specified region (IN–OUT) and the corresponding region of another track.

- You can swap the data of one or more tracks simultaneously.

i.e. Swapping the IN–OUT regions of track 1 and track 2.

*Before you execute this operation, check the virtual track of the **Source** and **Destination** tracks that you want to swap.*

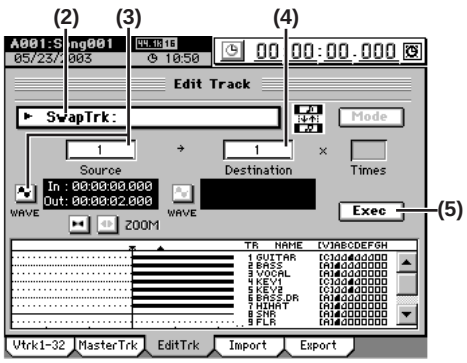
(1) Specify the region whose data will be swapped.
Set the following locations to specify the region for swapping (→p.69).
- Set the IN point to specify the beginning of the region to be swapped.
- Set the OUT point to specify the end of the region to be swapped.

(2) Select "SwapTrk."
In the **TRACK**, **"EditTrk"** tab page, press the **Edit Trk Type** cell. In the **Edit Trk Type** dialog box, choose **"SwapTrk"** and press the **OK** button.

(3) Select the track numbers whose data you want to swap.
- For the **Source** cell, select track **"1"**.
- Check the IN and OUT locations. If you want to set the locations with more precision, press the **Destination Wave** button, and use the **Wave** dialog box (→p.139) to set the location.

(4) Select the swap-destination track number.
Set the **Destination** cell to track **"2".**

*If you specified two or more tracks as the **"Source,"** you must specify the same number of tracks as the **"Destination."***



(5) Execute the editing operation.
Press the **Exec.** button. Then in the **SwapTrk** dialog box, press the **Yes** button to execute the operation.
When the operation is finished, the display will indicate **"Completed."** Press the **OK** button.

(6) Check the results of the editing operation.
Press the **LOC1/IN** key, and play back from the IN location to verify that the editing operation has done correctly.
If you are not satisfied with the results, you can use Undo to return to the previous state. (→p.147)

Reverse a track (ReverseTrk)

This command copies the audio data in the specified region (IN-OUT) of the track to the TO location "in reverse" (i.e., so that the data will play backward).

- The data of the IN–OUT region can be copied one or more times in succession by a single operation.
- You can copy just one track, or multiple tracks of data at the same time.
- The existing track data at the copy-destination (TO location) will be overwritten.

i.e. Copying the IN–OUT region of track 1 three times in reverse to the TO location of track 2

*Select the virtual tracks of the copy-source (**Source**) and copy-destination (**Destination**) before you make settings for this Copy operation.*

(1) Specify the region that you want to copy.
Set the following locations to specify the region for copying (→p.69).
- Set the IN point to specify the beginning of the region to be copied
- Set the OUT point to specify the end of the region to be copied
- Set the TO point to specify the beginning of the copy-destination

(2) Select "ReverseTrk."
In the **TRACK**, **"EditTrk"** tab page, press the **Edit Trk Type** cell. In the **Edit Trk Type** dialog box, choose **"ReverseTrk"** and press the **OK** button.

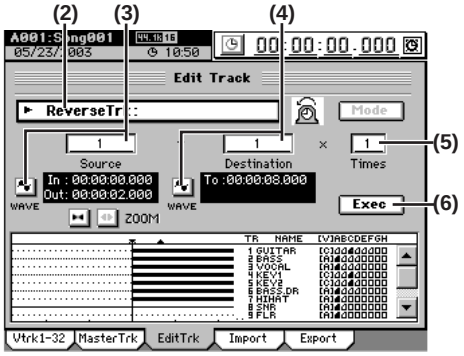
(3) Select the track number whose data you want to use as the reverse-source.
- For the **Source** cell, select track **"1"**.
- Check the IN and OUT locations. If you want to set the locations with more precision, press the **Source Wave** button, and use the **Wave** dialog box (→p.139) to set the location.

(4) Select the reverse-destination track number.
- For the **Destination** cell, select track **"2".**

note *If you specified two or more tracks as the "**Source**," you must specify the same number of tracks in "**Destination**."*

- Verify that the TO location is correct. If you want to set the location with more precision, press the **Destination Wave** button, and make your settings in the **Wave** dialog box (→p.139).

(5) Specify the number of time that you want to copy the data.
In the **Times** cell, specify the number of copies as **"3".**



(6) Execute the editing operation.
Press the **Exec.** button. Then in the **ReverseTrk** dialog box, press the **Yes** button to execute the operation.
When the operation is finished, the display will indicate **"Completed."** Press the **OK** button.

(7) Check the results of the editing operation.
Press the **LOC3/TO** key, and play back from the TO location to verify that the editing operation has done correctly.
If you are not satisfied with the results, you can use Undo to return to the previous state. (→p.147)

note *This editing operation will take a longer time for execution (until the **Completed** indication appears) in proportion to the length of the IN–OUT region you specify.*

Optimizing a track (OptimizeTrk)

This operation optimizes the track data of the region (IN–OUT) you specify.
For details on the effect of each optimize mode, refer to "OptimizeTrk" (→p.142) in the reference section.

Before you execute this operation, check the virtual track of the Destination track you want to optimize.

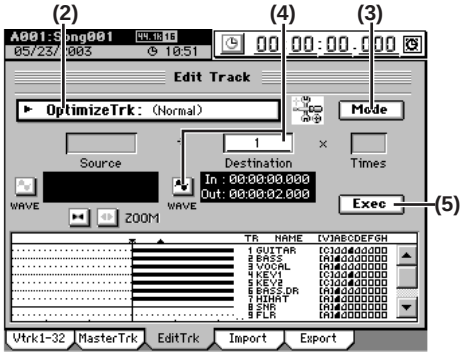
Optimizing track data

i.e. Here's how to optimize track 1 in order to prevent "Disk too busy." error messages that occur after repeated track editing or recording.

(1) Specify the region that you want to optimize.
Set the locations as follows (→p.69).
- Set the IN location to the beginning of the region you want to optimize.
- Set the OUT location to the end of the region you want to optimize.

(2) Select "OptimizeTrk."
In the **TRACK**, **"EditTrk"** tab page, press the **Edit Trk Type** cell. In the **Edit Trk Type** dialog box, select **"OptimizeTrk"** and press the **OK** button.

(3) Select the optimize mode.
Press the **Mode** button to display the **Optimize Mode** dialog box.
For this example, select **"Normal"** and press the **OK** button to return to the **"EditTrk"** tab page.



(4) Select the track number whose data you want to optimize.
- For this example, set the **Destination** cell to track **"1"**.
- Check the IN and OUT locations. If you want to set the locations with more precision, press the **Destination Wave** button, and use the **Wave** dialog box (→p.139) to set the location.

(5) Execute the editing operation.
Press the **Exec.** button. Then in the **OptimizeTrk** dialog box, press the **Yes** button to execute the operation.
When the operation is finished, the display will indicate **"Completed."** Press the **OK** button.

(6) Verify the results of the operation.
Press the **LOC1/IN** key, and play back from the IN point. If necessary, you can use Undo to return to the state prior to execution (→p.147).

note *This editing operation will take a longer time for execution (until the **Completed** indication appears) in proportion to the length of the IN–OUT region you specify.*

*Even if you have not repeatedly edited or recorded a specific track, the HDD/CD access indicator may stay lit continuously (not blinking) during recording or playback. The **"Disk too busy."** error message may appear in such cases.*
Execute the Optimize (normal) operation with Destination set to All, and the IN-OUT parameters set to the beginning and end of the song.

Erasing regions of silent audio data

Erasing regions of recorded silence, or areas of a recorded track where no audio information is present, restores valuable blank space to the hard drive for increased recording capacity.

i.e. Erasing regions of silent audio data from the IN–OUT region of track 1, converting them to blank space

(1) Specify the region that you want to optimize.
Set the locations as follows (→p.69).
- Set the IN location to a point slightly earlier than the region of silence that you want to erase.
- Set the OUT location to the point after the region of silence.

(2) Select "OptimizeTrk."
In the **TRACK**, **"EditTrk"** tab page, press the **Edit Trk Type** cell. In the **Edit Trk Type** dialog box, select **"OptimizeTrk"** and press the **OK** button.

(3) Select the optimize mode.
Press the **Mode** button to display the **Optimize Mode** dialog box.
For this example, select **"Erase Silence"** and press the **OK** button to return to the **"EditTrk"** tab page.

(4) Select the destination track number for optimization.
- For this example, set the **Destination** cell to track **"1"**.
- Check the IN and OUT locations. If you want to set the locations with more precision, press the **Destination Wave** button, and use the **Wave** dialog box (→p.139) to set the location.

(5) Execute the editing operation.
Press the **Exec.** button. Then in the **OptimizeTrk** dialog box, press the **Yes** button to execute the operation.
When the operation is finished, the display will indicate **"Completed."** Press the **OK** button.

(6) Verify the results of the operation.
Press the **LOC1/IN** key, and play back from the IN point. If necessary, you can use Undo to return to the state prior to execution (→p.147).

note *This editing operation will take a longer time for execution (until the **Completed** indication appears) in proportion to the length of the IN–OUT region you specify.*

Erasing noise

i.e. Erasing noise from the IN–OUT region of track 1

(1) Specify the region that you want to optimize.
Set the locations as follows (→p.69).
- Set the IN location to a point slightly earlier than where the noise occurs.
- Set the OUT location to a point after the noise.

(2) Select "OptimizeTrk."
In the **TRACK**, **"EditTrk"** tab page, press the **Edit Trk Type** cell. In the **Edit Trk Type** dialog box, select **"OptimizeTrk"** and press the **OK** button.

(3) Select the optimize mode.
Press the **Mode** button to display the **Optimize Mode** dialog box.
For this example, select **"Erase Punch Noise"** and press the **OK** button to return to the **"EditTrk"** tab page.

(4) Select the destination track number for optimization.
- For this example, set the **Destination** cell to track **"1"**.
- Check the IN and OUT locations. If you want to set the locations with more precision, press the **Destination Wave** button, and use the **Wave** dialog box (→p.139) to set the location.

(5) Execute the editing operation.
Press the **Exec.** button. Then in the **OptimizeTrk** dialog box, press the **Yes** button to execute the operation.
When the operation is finished, the display will indicate **"Completed."** Press the **OK** button.

(6) Verify the results of the operation.
Press the **LOC1/IN** key, and play back from the IN point. If necessary, you can use Undo to return to the state prior to execution (→p.147).

*If this does not remove the noise, use Undo to return to the previous state, and in the **Optimize Mode** dialog box of step (3), raise the **"Sense"** value slightly (→p.143).*

note *This editing operation will take a longer time for execution (until the **Completed** indication appears) in proportion to the length of the IN–OUT region you specify.*

Expand/compress a track (ExpCmpTrk)

This command expands or compresses the specified region (IN–OUT) of recorded track data to fit the specified region (TO–END) of another track.

- The expanded or compressed data can be created in a different track, while preserving the original data.
- You can specify whether to convert the pitch.
- You can simultaneously convert up to two tracks of data.
- The converted data can be copied one or more times in succession.

This command can be used in ways such as the following.

- To convert drum loops of differing tempos to the same tempo.
- To make a phrase fit within a specified location.

i.e. Converting the IN–OUT region of track 1 into the length of the TO-END region of track 2 without changing the pitch, and copying it three times starting at the TO location of track 2

Before you execute this operation, check the virtual tracks of the expansion/compression Source and Destination.

(1) Specify the regions for expansion/compression.
Set the locations as follows (→p.69).
- Set the IN point to the beginning of the source region.
- Set the OUT point to the end of the source region.
- Set the TO point to the beginning of the destination region.
- Set the END point to the end of the destination region.

(2) Select "ExpCmpTrk."
In the **TRACK**, **"EditTrk"** tab page, press the **Edit Trk Type** cell. In the **Edit Trk Type** dialog box, choose **"ExpCmpTrk"** and press the **OK** button.

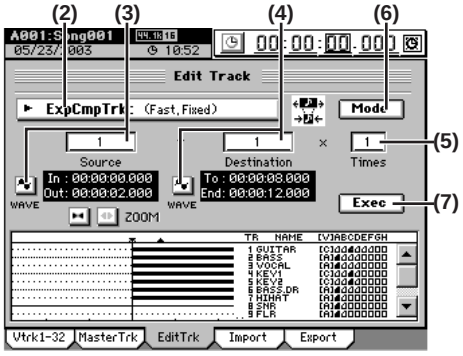
(3) Select the expansion/compression-source track number.
- For the **Source** cell, select track **"1"**.
- Check the IN and OUT locations. If you want to set the locations with more precision, press the **Source Wave** button, and use the **Wave** dialog box (→p.139) to set the location.

(4) Select the expansion/compression-destination track number.
- For the **Destination** cell, select track **"2".**

note *If you specified two or more tracks as the **"Source,"** you must specify the same number of tracks in **"Destination."***

- Check the IN and OUT locations. If you want to set the location more precisely, press the **Destination Wave** button, and make your settings in the **Wave** dialog box (→p.139).

(5) Specify the number of time that you want to copy the data.
In the **Times** cell, specify the number of copies as **"3".**



(6) Select the expansion/compression mode.
Press the **Mode** button to display the **ExpCmp Mode** dialog box, select the desired mode, and press the **OK** button.
For details on the effect of each mode, refer to "ExpCmpTrk" (→p.143) A5. Mode.
For this example, select **"Fast"** (priority given to processing speed) and **"Fixed"** (pitch remains unchanged).
Then press the **OK** button to return to the **"EditTrk"** tab page.

(7) Execute the editing operation.
Press the **Exec.** button. Then in the **ExpCmpTrk** dialog box, press the **Yes** button to execute the operation.
When the operation is finished, the display will indicate **"Completed."** Press the **OK** button.

(8) Check the results of the editing operation.
Press the **LOC3/TO** key, and play back from the TO location to verify that the editing operation has done correctly.
If you are not satisfied with the results, you can use Undo to return to the previous state. (→p.147)

note *This editing operation will take a longer time for execution (until the **Completed** indication appears) in proportion to the length of the IN–OUT region you specify.*

Copy an entire track/Copying to a Virtual track (CopyWholeTrk)

This command copies an entire recorded track (from the beginning to the end) to another track.

- You can copy one or more tracks simultaneously.
- You can specify the copy-destination virtual track.

For example, you could use this operation if you wanted to copy a track to two or more virtual tracks, and then create variations of the performance in each of the those virtual tracks.

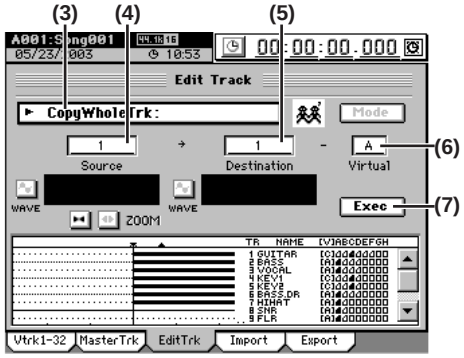
Copying to a virtual track

i.e. Copying the data of track 1 virtual track "A" to track 2 virtual track "B"

(1) Select the copy-source virtual track.
In the **TRACK**, **"Vtrk1–32 [*Vtrk1–16]"** tab page, select virtual track **"A"** for track 1.

(2) Verify the copy-destination.
In the **TRACK**, **"Vtrk1–32 [*Vtrk1–16]"** tab page, verify that virtual track **"B"** of track 2 is either empty or contains data you don't mind losing (i.e., data that it is OK to overwrite).

(3) Select "CopyWholeTrk."
In the **TRACK**, **"EditTrk"** tab page, press the **Edit Trk Type** cell. In the **Edit Trk Type** dialog box, choose **"CopyWholeTrk"** and press the **OK** button.



(4) Select the copy-source track number.
For the **Source** cell, select track **"1"**.

(5) Select the copy-destination track number.
For the **Destination** cell, select track **"2".**

note *If you specified two or more tracks as the **"Source,"** you must specify the same number of tracks in **"Destination."***

(6) Select the copy-destination virtual track.
In the **Virtual** cell, select virtual track **"B"**.

(7) Execute the editing operation.
Press the **Exec.** button. Then in the **CopyWholeTrk** dialog box, press the **Yes** button to execute the operation.
When the operation is finished, the display will indicate **"Completed."** Press the **OK** button.

(8) In the TRACK, "Vtrk1–32 [*Vtrk1–16]" tab page, select virtual track "B" for track 2.

(9) Check the results of the editing operation.
Play back from the beginning of the song to verify that the copy was performed correctly.
If you are not satisfied with the results, you can use Undo to return to the previous state. (→p.147)

Exchange two entire tracks (SwapWholeTrk)

This command exchanges an entire track of recorded data (from the beginning to the end) with another track.

- You can exchange one or more tracks in a single operation.

This can be used in ways such as the following.

- Rearrange recorded tracks to organize them by type.
- Rearrange data that extends across differing virtual tracks so that each track uses (for example) virtual track **"A."**
- Place two tracks that were recorded separately into adjacent tracks so that they can be paired.

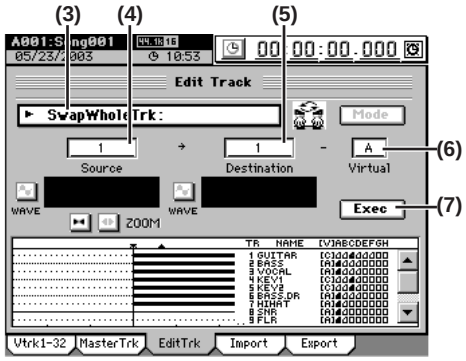
Swapping entire tracks

i.e. Swapping track 1 virtual track "A" with track 2 virtual track "B"

(1) Select the source track that you want to swap.
In the **TRACK**, **"Vtrk1–32 [*Vtrk1–16]"** tab page, select track 1 virtual track **"A."**

(2) Select the destination track that you want to swap.
In the **TRACK**, **"Vtrk1–32 [*Vtrk1–16]"** tab page, verify that track 2 virtual track **"B"** is the track you want to swap.

(3) Select "SwapWholeTrk."
In the **TRACK**, **"EditTrk"** tab page, press the **Edit Trk Type** cell. In the **Edit Trk Type** dialog box, choose **"SwapWholeTrk"** and press the **OK** button.



(4) Select the swap-source track number.
For the **Source** cell, select track **"1"**.

(5) Select the swap-destination track number.
For the **Destination** cell, select track **"2".**

note *If you specified two or more tracks as the "**Source,**" you must specify the same number of tracks in "**Destination.**"*

(6) Select the swap-destination virtual track.
In the **Virtual** cell, select virtual track **"B"**.

(7) Execute the editing operation.
Press the **Exec.** button. Then in the **SwapWholeTrk** dialog box, press the **Yes** button to execute the operation.
When the operation is finished, the display will indicate **"Completed."** Press the **OK** button.

(8) In the TRACK, "Vtrk1–32 [*Vtrk1–16]" tab page, select virtual track "B" for track 2.

(9) Check the results of the editing operation.
Play back from the beginning of the song to verify that the swapping was performed correctly. In the same way, check the **"Source"** track 1 virtual track **"A"** as well.
If you are not satisfied with the results, you can use Undo to return to the previous state. (→p.147)
In this case, return the track 1 virtual track selection to **"A."**

Fade-in/fade-out (FadeTrk)

This command fades-in or fades-out the specified region (IN–OUT) of recorded track data. By using both of these operations, you can create cross-fades.

- You can fade-in or fade-out one or more tracks simultaneously.

Creating a fade-in

i.e. Fading-in the IN–OUT region of track 1

(1) Specify the region that you want to fade-in.
Set the following locations to specify the region where the fade-in will occur (→p.69).

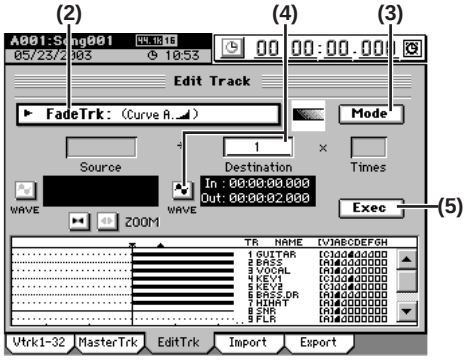
- Set the IN point to specify the beginning of the region where the fade-in will occur.
- Set the OUT point to specify the end of the region where the fade-in will occur.

(2) Select "FadeTrk."
In the **TRACK**, **"EditTrk"** tab page, press the **Edit Trk Type** cell. In the **Edit Trk Type** dialog box, choose **"FadeTrk"** and press the **OK** button.

(3) Select the fade-in curve.
Press the **Mode** button to display the **Fade Mode** dialog box.
A.B.C: Fade-in curve
D.E.F: Fade-out curve
For details on how these curves differ, refer to **"FadeTrk"** (→p.145).
For this example, select the type **"A"** curve and press the **OK** button to return to the **"EditTrk"** tab page.

(4) Select the track number that you want to fade-in.

- For the **Destination** cell, select track **"1"**.
- Check the IN and OUT locations. If you want to set the locations with more precision, press the **Destination Wave** button, and use the **Wave** dialog box (→p.139) to set the location.



(5) Execute the editing operation.
Press the **Exec.** button. Then in the **FadeTrk** dialog box, press the **Yes** button to execute the operation.
When the operation is finished, the display will indicate **"Completed."** Press the **OK** button.

(6) Check the results of the editing operation.
Press the **LOC1/IN** key, and play back from the IN location to verify that the fade-in performs correctly.
If you are not satisfied with the results, you can use Undo to return to the previous state. (→p.147)

note *This editing operation will take a longer time for execution (until the **Completed** indication appears) in proportion to the length of the IN–OUT region you specify.*

Creating a fade-out

i.e. Fading-out the IN–OUT region of track 1

(1) Specify the region that you want to fade-out.
Set the following locations to specify the region where the fade-out will occur (→p.69).
- Set the IN point to specify the beginning of the region where the fade-out will occur.
- Set the OUT point to specify the end of the region where the fade-out will occur.

(2) Select "FadeTrk."
In the **TRACK**, **"EditTrk"** tab page, press the **Edit Trk Type** cell. In the **Edit Trk Type** dialog box, choose **"FadeTrk"** and press the **OK** button.

(3) Select the fade-out curve.
Press the **Mode** button to display the **Fade Mode** dialog box.
A.B.C: Fade-in curve
D.E.F: Fade-out curve
For details on how these curves differ, refer to **"FadeTrk"** (→p.145).
For this example, select the type **"D"** curve and press the **OK** button to return to the **"EditTrk"** tab page.

(4) Select the track number that you want to fade-out.
- For the **Destination** cell, select track **"1"**.
- Check the IN and OUT locations. If you want to set the locations with more precision, press the **Destination Wave** button, and use the **Wave** dialog box (→p.139) to set the location.

(5) Execute the editing operation.
Press the **Exec.** button. Then in the **FadeTrk** dialog box, press the **Yes** button to execute the operation.
When the operation is finished, the display will indicate **"Completed."** Press the **OK** button.

(6) Check the results of the editing operation.
Press the **LOC1/IN** key, and play back from the IN location to verify that the operation has done correctly.
If you are not satisfied with the results, you can use Undo to return to the previous state. (→p.147)

note *This editing operation will take a longer time for execution (until the **Completed** indication appears) in proportion to the length of the IN–OUT region you specify.*

Boosting the maximum volume to the specified level (Normalize: NormalizeTrk)

If the recorded level of a track is lower than necessary, you can use this operation to boost the overall level of the specified region (IN–OUT) so that its maximum volume reaches the specified level.

- You can normalize one track or simultaneously normalize the data of adjacent tracks.

note *If you boost data that was recorded at an extremely low level, any noise in that region will also be boosted.*

i.e. Normalizing the IN–OUT region of track 1

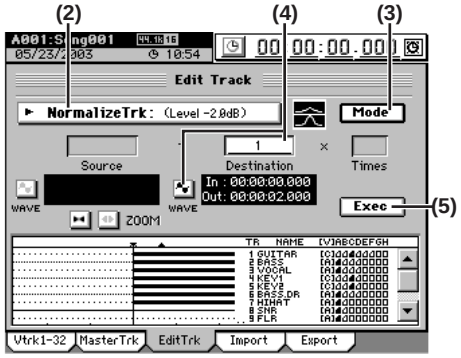
(1) Specify the region that you want to normalize.
Set the following locations to specify the region for normalize (→p.69).
- Set the IN point to specify the beginning of the region to be normalized.
- Set the OUT point to specify the end of the region to be normalized.

(2) Select "NormalizeTrk."
In the **TRACK**, **"EditTrk"** tab page, press the **Edit Trk Type** cell. In the **Edit Trk Type** dialog box, choose **"NormalizeTrk"** and press the **OK** button.

(3) Specify the maximum level.
Press the **Mode** button to display the **Normalize Mode** dialog box. Set the **"Normalize Gain Level"** value, and press the **OK** button.

(4) Select the track number that you want to normalize.
- For the **Destination** cell, select track **"1"**.
- Check the IN and OUT locations. If you want to set the locations with more precision, press the **Destination Wave** button, and use the **Wave** dialog box (→p.139) to set the location.

(5) Execute the editing operation.
Press the **Exec.** button. Then in the **NormalizeTrk** dialog box, press the **Yes** button to execute the operation.
When the operation is finished, the display will indicate **"Completed."** Press the **OK** button.



(6) Check the results of the editing operation.
Press the **LOC1/IN** key, and play back from the IN location to verify that the data was normalize correctly.
If you are not satisfied with the results, you can use Undo to return to the previous state. (→p.147)

note *This editing operation will take a longer time for execution (until the **Completed** indication appears) in proportion to the length of the IN–OUT region you specify.*

4. Naming a track

You can assign a name to each track.
When you create a new song, the track name will be **"No Name."**
We recommend that you rename the track so that you can remember which part is recorded on which track.

(1) Use the TRACK, "Vtrk1–32 [*Vtrk1–16]" tab page to select the track that you want to rename.

(2) Press the Rename button.

(3) Edit the name in the Rename dialog box.
For details, refer to "1-2. Renaming a song" (→p.36).

CD

You can use the internal CD-R/RW drive to create an original CD from any of your songs that have been mixed down to the master tracks.
There are two ways to create a CD.

Track At Once
With this method, you write each song individually, one at a time.

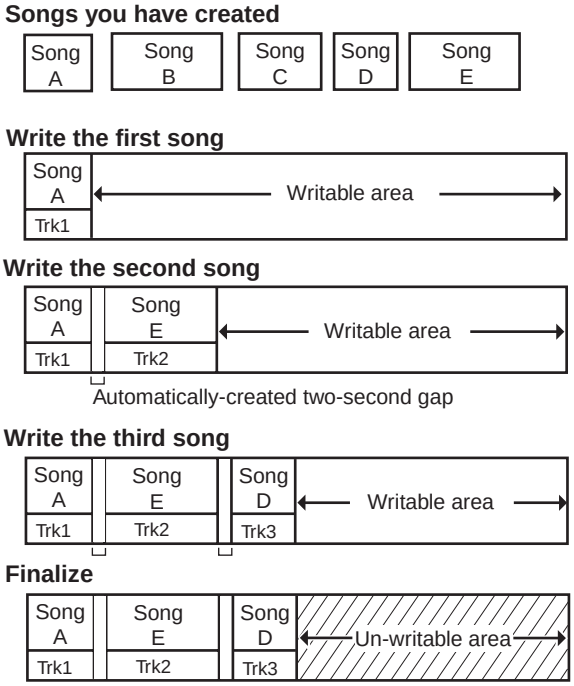
Disc At Once (Album CD Project)
With this method, you arrange your completed songs in the desired playback order, and write all songs to the CD in one operation.

1. Track At Once

With this method, songs are written to the CD one at a time. A two-second gap will automatically be added between songs.
In order to play back the completed CD, you must finalize the disc.

No additional songs can be written to a disc once it has been finalized.

note *Since some audio CD players are unable to play CD-RW discs, we recommend that you use CD-R discs.*



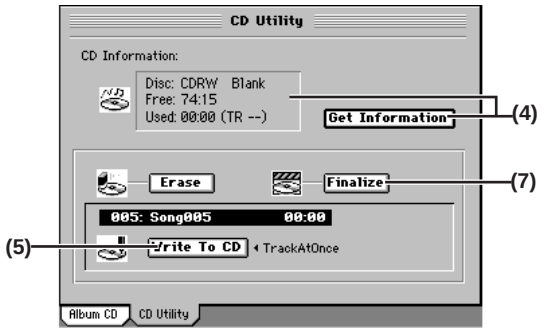
(1) Create the master track(s) for the songs you want to write to the CD (→p.67 "1-6. Creating a master track").

(2) Insert a disc into the CD-R/RW drive.
Use a blank disc or a disc that has not been finalized.

(3) Select the song that you want to write to the disc (→p.37).

note *You must select a song for which a master track has been created.*

(4) Access the CD, CD WRITER, "CD Utility" tab page, and press the Get Information button.
The **"CD Information"** area will show either **"Blank Disc"** or the CD track number(s).
Make sure that **"Free"** shows a duration that is longer than the song you want to write.



(5) Write the song.

- Press the **WriteToCD** button to display the **Write To CD** dialog box.

- Select the writing speed.

You must use a disc that supports the selected writing speed.

- A message of **"Obey Copyright Rules"** will appear. Read the owner's manual section "COPYRIGHT WARNING" (→p.iii), and press the **Yes** button if you accept the terms.

note *If the selected song is 24-bit, press the **Dither** button to turn it on if you want dithering to be performed.*

- The D32XD/D16XD will begin creating an image file.

note *The data will be written to CD as a 44.1 kHz song. If you select a song whose sampling rate is other than 44.1 kHz, the data must be converted, and a certain amount of time will be required for the conversion to be performed before the song appears in the track list.*

note *You can abort creation of the image file by pressing the **Cancel** button.*

- When the image file has been created, the D32XD/D16XD will begin writing it to disc.
- When writing is completed, the display will indicate **"Completed."** If you want to create another disc with the same data, press the **Yes** button. Otherwise, press the **No** button to proceed to the next step.

note *If you create another disc with the same data, the process will take less time since the image file has already been created.*

(6) If you want to write another song to the CD, repeat steps (2) through (5).
Each song will be written following the end of the last song on disc.

(7) Finalize the disc.
When you are finished writing songs to this CD, and want to be able to play the disc on an audio CD player, press the **Finalize** button to finalize the disc. A message will ask you for confirmation. If you are sure you want to finalize the disc, press the **Yes** button.

note *Once a disc has been finalized, no further songs can be added to it. In other words, you should finalize a disc only after you have written all the songs that you intend to write to it.*

(8) When finalization is completed, the CD-R/RW drive tray will open.
The LCD screen will indicate **"Completed."** Press the **OK** button to return to the **"CD Utility"** tab page.

(9) Check the CD by playing it on an audio CD player.
Play the CD on an audio CD player to verify that your audio CD was created correctly.

2. Disc At Once

2-1. Album CD Project

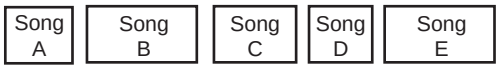
If you use Album CD Project to create a CD, you can specify the amount of silence (blank space) between each track, and assign marks for each song to specify the beginning of each track.
In addition, since this method writes the CD using Disc At Once, the audio CD you create can be used as a master CD for pressing.
You can create one Album CD Project for each song drive, and can also back up the data to CD-R/RW (→p.82).

If you use Album CD Project to write a disc, no additional data can be written to that disc.

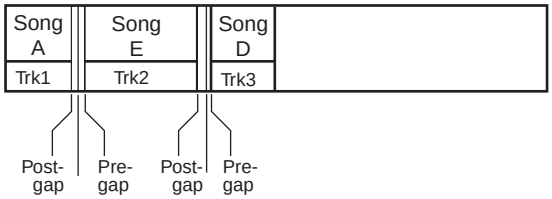
When you create an Album CD Project, new audio data for writing will be created; this will occupy additional hard disk space.

Even if you delete the original songs, the Album CD Project audio data will not be deleted.

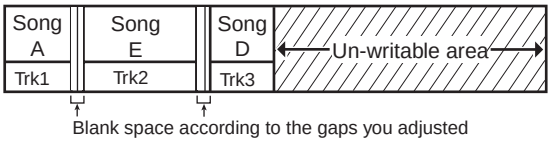
Songs you have created



Select the songs, specify their order, and adjust the gaps



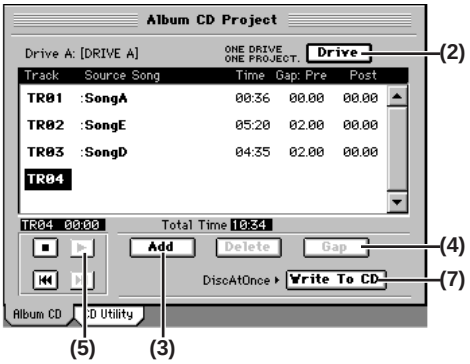
Write all songs at once



(1) Collect all the songs you want to use for the Album CD Project into a single song drive (→p.41).

(2) Select the song drive.
Access the **CD**, **CD WRITER**, **"Album CD"** tab page, press the Drive button, select the song drive that contains the songs you want to write, and press the **OK** button.

(3) Assign your songs to the Album CD Project track list in the same order that you want them to appear on the finished CD.



- Select (highlight) TR01, and press the **Add** button to display the **Add TR** dialog box.
- Select the first track of the CD (it will become highlighted), and press the **OK** button. The display will ask **"Are You Sure?"**, so press the **Yes** button.

note *If the selected song is 24-bit, press the **Dither** button to turn it on if you want dithering to be performed.*

note *The data will be written to CD as a 44.1 kHz song. If you select a song whose sampling rate is other than 44.1 kHz, the data must be converted, and a certain amount of time will be required for the conversion to be performed before the song appears in the track list.*

- The display will indicate **"Completed,"** so press the **OK** button.
- In the same way, specify the songs for TR02 and following.

note *You cannot select a song for which a master track has not been created.*

You cannot select songs from a different song drive.

(4) Specify the size of the gaps between each track.
Press the **Gap** button, specify the pre-gap and post-gap, and press the **OK** button.
Use the **Sec** cell to specify the gap in terms of seconds, or the **Frm** cell to specify the gap in terms of frames (one second = 75 frames).
You can set the gaps independently for each song.

PreGapTime: The period of silence before the song.
PostGapTime: The period of silence after the song.

note *By default, the pre-gap is two seconds, and the post-gap is zero seconds. However, the pre-gap for the first song is zero seconds, and this cannot be changed.*

note *For a song that fades-out, you can reduce the gaps to avoid a unwanted sense of waiting between songs.*

(5) Audition the Album CD Project.
Press the ► button in the screen to play back the album project. Listen to it through your headphones or monitor system.
The album project will be played back exactly as it will sound when written to the CD.

(6) Insert a disc into the CD-R/RW drive.
You must use a blank disc.

(7) Write the album to disc.

- Press the **WriteToCD** button to display the **Write To CD** dialog box.

- Select the writing speed.

You must use a disc that supports this writing speed.

- A message of **"Obey Copyright Rules"** will appear. Read the owner's manual section "COPYRIGHT WARNING" (→p.iii), and press the **Yes** button if you accept the terms. The D32XD/D16XD will begin creating an image file.

note *You can abort creation of the image file by pressing the **Cancel** button.*

- When the image file has been created, the D32XD/D16XD will begin writing it to disc.

You cannot abort this writing operation.

- The disc will automatically be finalized.
- When finalization has been completed, the **"Write Another CD?"** message will appear.

- If you want to create another disc with the same data, press the **Yes** button. Otherwise, press the **No** button.

note *If you create another disc with the same data, the process will take less time since the image file has already been created.*

(8) Check the CD by playing it back on an audio CD player.
Play back the CD on an audio CD player to verify that your audio CD was created correctly.
During playback, the gaps between songs will be displayed as negative track times.

2-2. Creating a live CD

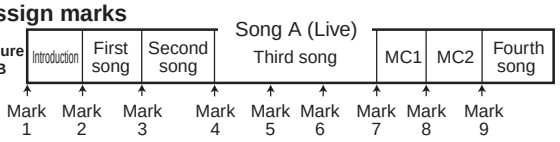
i.e. Assigning a track index to each of the individual songs recorded as part of one continuous live performance on song A (figure A), to create a live CD in which there are no gaps between tracks, and the song or dialog starts at the beginning of each track

Song you already created

Figure A

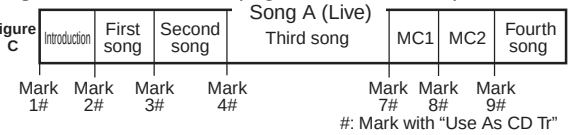
Assign marks

Figure B



Register Use As CD Tr (register marks with #)

Figure C



Load into the Album CD Project track list

Figure D

Introduction	First song	Second song	Third song	MC1	MC2	Fourth song
TR01	TR02	TR03	TR04	TR05	TR06	TR07

Delete unwanted tracks (TR01, TR06), and write the song

Figure E

First song	Second song	Third song	MC1	Fourth song
TR01	TR02	TR03	TR04	TR05

(1) Select the song that you want to make into a live CD (→p.37). [Figure A]
Create a master track for this song.

(2) Assign marks at appropriate locations within the song (→p.39). [Figure B]

(3) Assign "Use As CD Tr" marks. [Figure C]

- Access the **MARK**, **"EditMark"** tab page, assign a mark at each location that you want to use as the beginning of a track, and press the **Use As CD Tr** button to add a **"Use As CD Tr"** mark.

*The **"Use As CD Tr"** mark will always be added to mark 001, and this cannot be deleted. (The track at mark 001 can be deleted from the Album CD Project, if desired.)*

(4) Access the CD, CD WRITER, "Album CD" tab page.

(5) In the track list, select the song that you want to write [Figure D].

Press the **Add** button, select song A, and press the **OK** button.
The display will ask **"Are You Sure?"** Press the **Yes** button.

note *If the selected song is 24-bit, press the **Dither** button to turn it on if you want dithering to be performed.*

note *The data will be written to CD as a 44.1 kHz song. If you select a song whose sampling rate is other than 44.1 kHz, the data must be converted, and a certain amount of time will be required for the conversion to be performed before the song appears in the track list.*

The display will indicate **"Completed."** Press the **OK** button to return to the Album CD Project screen.
The locations at which you assigned the **"Use As CD Tr"** marks will divide the song into tracks in the track list.

(6) Edit the album CD project. [Figure E]

- Delete unwanted tracks.
- The pre-gap and post-gap will both be zero between tracks to which you assigned the **"Use As CD Tr"** mark, but you may edit this if you wish.

(7) Play back the album CD project to check it.
("2-1. Album CD Project" (→p.80), step (5))

(8) Perform steps (6)–(8) of "Album CD Project."

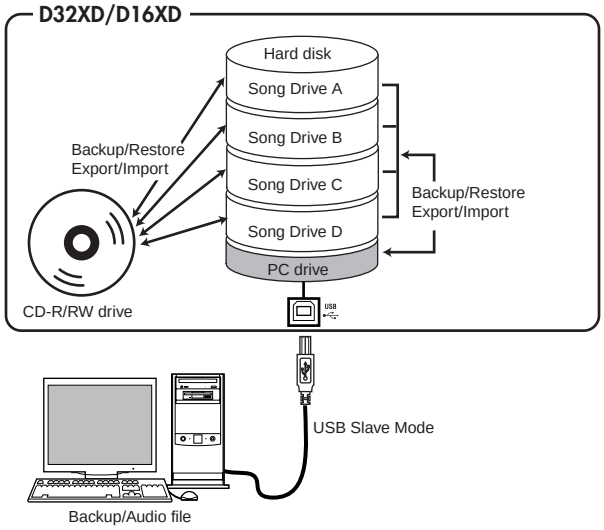
note *You can also use this same method to create track indexes inside one single long song, so that a certain section can be accessed instantly.*

Data

Whenever you switch songs or turn off the power, the D32XD/D16XD's Auto Save function will automatically save (to the hard drive) the songs or parameters that you recorded or edited.
This means that you do not need to perform any particular operations to save your data (→p.42 "Saving a song").

note *You do need to save the effect settings if you have edited effect programs.*

The data saving operations explained in this section are used when you have created important data on the D32XD/D16XD that you want to save on a CD-R/RW or your computer, or when you want to delete data from the hard disk to obtain more free space.
Depending on the type of data, you can use either Backup or Export to save it.
Data you back up can be used again by restoring or importing it.



For details on the file names, restrictions, and filename extensions of the data that you can backup/restore or export/import, refer to "More about drives and files" (→p.173).

note *If you want to save data on your computer, first store the data in the PC drive of the D32XD/D16XD's hard disk, and then save that data on your computer.*

The following table shows the data you can save.

Data save/load methods and types of file that can be saved

Save method		File types
Backup/ Restore	**1Song**	Data for one song + User data
	All Data	All song data on the selected song drive + Album CD project + User Data
	User Data	User effect programs + User EQ libraries + User comp programs
Export/Import		Audio file data (WAV format)

1. Backing up and restoring

1-1. Backing up

You can back up data to CD-R/RW or the PC drive.
The following data can be backed up.

1Song
Back up one song from the selected drive and the user data.

All Data
Back up all songs from the selected drive, the user data, and the album CD project.

User Data
Back up only the user data (user effect programs, user EQ libraries, user comp programs).

A backed-up song cannot be played back directly. In order to play the song, you must restore it.

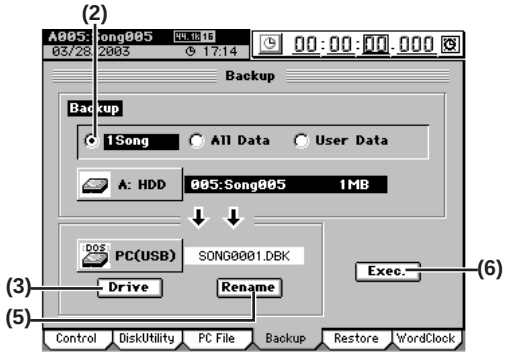
Backing up 1Song

(1) Select the song that you want to back up (→p.37).

(2) Select the type of backup.
In the **SYSTEM**, **"Backup"** tab page, press the **"1Song"** radio button.

(3) Select the backup-destination drive.
Press the **Drive** button to open the **Select Drive** dialog box. Press either the **"CD"** or **"PC"** radio button, and then press the **Yes** button.

(4) If you are backing-up to CD-R/RW, insert a disc in the CD-R/RW drive.
Use a blank disc or an ISO9660 format disc that has not been finalized.



(5) Edit the file name.
A file name is assigned automatically (→p.174).
If you want to edit the file name, press the **Rename** button.
Use the **Rename** dialog box to edit the file name (→p.36).

note *If the backup-destination already contains an identically-named file, you will be unable to execute the backup. Please rename the file.*

(6) Execute the backup.
When you press the **Exec.** button, the **Backup** confirmation dialog box will appear.

When backing up to CD-R/RW
The screen will indicate the space required for the backup. If the data will not fit on one CD-R/RW, you will need to prepare the appropriate number of discs.

- Use the **WriteSpeed** cell to select the writing speed.
- If you want to make it impossible to write any further data on this CD when you are done backing up, check the **Finalize CD** check box.
- Press the **Yes** button to begin the backup.
- The D32XD/D16XD will begin creating an image file.

note *You can press the **Cancel** button to abort creation of the image file.*

- When the image file has been created, writing to the disc will begin.
- If more than one disc is required, a dialog box will request the next disc when one disc fills up. Insert the next disc, and press the **OK** button.
- When the backup is finished, the display will indicate **"Completed."** Press the **OK** button.

note *When backing up to CD-R/RW, the written data is automatically compared to ensure that an invalid backup CD is not created.*

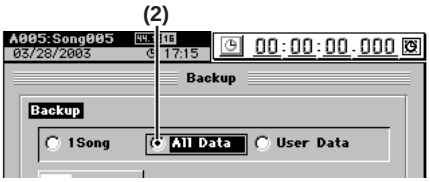
When backing up to the PC drive
The screen will indicate the space required for the backup. Press the **Yes** button to begin the backup. When the display indicates **"Completed,"** press the **OK** button. This completes the backup.

You cannot back up to the PC drive if the size of the backup is larger than the free space on the PC drive. Change the backup-destination to CD-R/RW.

Backing up All Data

(1) Select the song drive that you want to back up.
In the **SONG**, **"SelectSong"** tab page, press the **Drive** button. In the **Select Drive** dialog box, select the drive and press the **OK** button.

(2) Select the type of backup.
In the **SYSTEM**, **"Backup"** tab page, press the **"All Data"** radio button.



(3) Select the backup-destination drive.
Press the **Drive** button to open the **Select Drive** dialog box. Press either the **"CD"** or **"PC"** radio button, and then press the **Yes** button.

(4) If you are backing-up to CD-R/RW, insert a disc in the CD-R/RW drive.
Use a blank disc or an ISO9660 format disc that has not been finalized

(5) Edit the file name.
A file name is assigned automatically (→p.174).
If you want to edit the file name, press the **Rename** button.
Use the **Rename** dialog box to edit the file name (→p.36).

note *If the backup-destination already contains an identically-named file, you will be unable to execute the backup. Please rename the file.*

(6) Execute the backup.
Refer to the preceding section "Backing up 1Song," step (6).

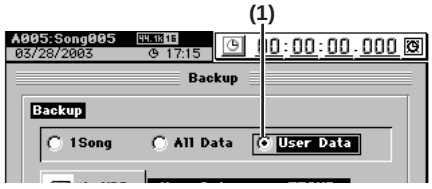
Backing up User Data

note *The **"1Song"** or **"All Data"** backup operations also back up User Data.*

(1) Select the type of backup.
In the **SYSTEM**, **"Backup"** tab page, press the **"User Data"** radio button.

(2) Select the backup-destination drive.
Press the **Drive** button to open the **Select Drive** dialog box. Press either the **"CD"** or **"PC"** radio button, and then press the **Yes** button.

(3) If you are backing-up to CD-R/RW, insert a disc in the CD-R/RW drive.



(4) Edit the file name.
A file name is assigned automatically (→p.174).
If you want to edit the file name, press the **Rename** button.
Use the **Rename** dialog box to edit the file name (→p.36).

note *If the backup-destination already contains an identically-named file, you will be unable to execute the backup. Please rename the file.*

(5) Execute the backup.
Refer to "Backing up 1Song," step (6).

1-2. Restoring backed-up data

Here's how to restore data that previously backed-up. When backed-up song data is restored into the D32XD/D16XD, it will once again be playable.

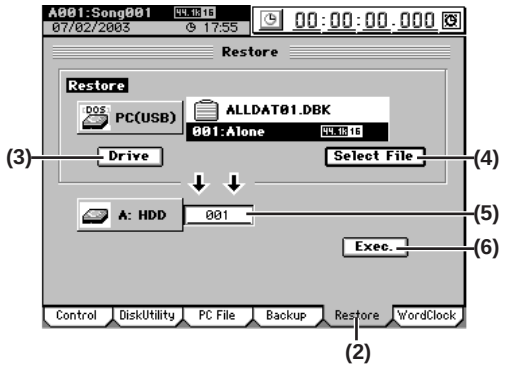
(1) Select the restore-destination drive (→p.37).
If you are restoring song data or an album CD project, select the restore-destination song drive.

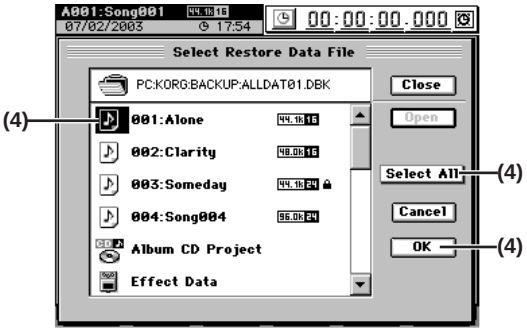
(2) Select "Restore."
Access the **SYSTEM**, **"Restore"** tab page.

(3) Select the restore-source drive.
Press the **Drive** button to open the **Select Drive** dialog box, select either **"CD"** or **"PC,"** and press the **Yes** button.
If you selected **"CD,"** insert the backup disc into the CD-R/RW drive.

(4) Select the restore-source file.
Press the **Select File** button to open the **Select Restore Data File** dialog box.
Folders will be created depending on the type of backup. Open the folder and select the data file you want to restore.
For details on the icons that are displayed, refer to "More about drives and files" (→p.175).

- From the file list, select the folder that contains the data file you want to restore, and press the **Open** button. If you decide to select a different folder, press the **Close** button to return to the next higher level.
- From the file list, select the data file that you want to restore, and press the **OK** button.
- If you want to restore all files in the folder as a single operation, press the **Select All** button.





(5) Select the restore-destination for the file(s) you are restoring.

When restoring song data

- In the restore-destination cell, specify a song number.
- When you restore, the restored song will be inserted at the specified song number of the current drive.

When restoring an album CD project

- Since the project will be restored to the current drive, you do not need to specify the restore-destination.
- When you restore, the album CD project in the current drive will be overwritten.

When restoring other data files

- Since these files are common to all song drives, you do not need to specify the restore-destination.
- When you restore, the existing data files will be overwritten.

When restoring all data files in a folder at once

- You do not need to specify the restore-destination.
- When you restore, the song data will be written following the songs on the current drive, and other data will be overwritten.

(6) Execute the restore.
Press the **Exec.** button. In the confirmation dialog box, press the **Yes** button to execute. If you press the **No** button, the restore operation will be aborted.

If you are restoring a backup that spanned more than one disc, the D32XD/D16XD will ask you for the next disc when it has finished reading one disc. Insert the next disc and press the **Yes** button. Insert the discs in the order in which they were written during the backup operation.

(7) When the restore operation is finished, the display will indicate "Completed." Press the OK button.

note *When restoring from the PC drive, the song effect program data will not be restored unless it has the same name as the song that is being restored.*

2. Audio files

Audio files saved on CD-ROM/R/RW or the PC drive can be imported (loaded) into the D32XD/D16XD and pasted into a song track. Also, any audio track data that you copied to the D32XD/D16XD's clipboard can be exported (written) to CD-R/RW or the PC drive as an audio file.

WAV audio files of the following formats are supported.

Sampling frequency:	44.1 kHz, 48 kHz, 96 kHz
Bit depth:	16-bit, 24-bit
Number of channels:	1 (monaural), 2 (stereo)

2-1. Importing an audio file

Here's how to load an audio file from CD-ROM/R/RW or the PC drive.

note *You can use the Undo function to return to the state prior to execution.*

note *If you want to import an audio file from your computer, connect a USB cable, copy the audio file to the PC drive of the D32XD/D16XD, and then perform the procedure described below.*

note *If the sampling frequency and bit depth of the audio file differs from that of the import-destination song, the data will be converted automatically. You can choose to perform dithering at this time.*

Importing an audio track into the beginning of a track

i.e. **Importing a 44.1 kHz/24-bit stereo audio file named "D16XD_ST.WAV" from CD, and loading it into the beginning of tracks 1 and 2 of a 44.1 kHz/16-bit song**

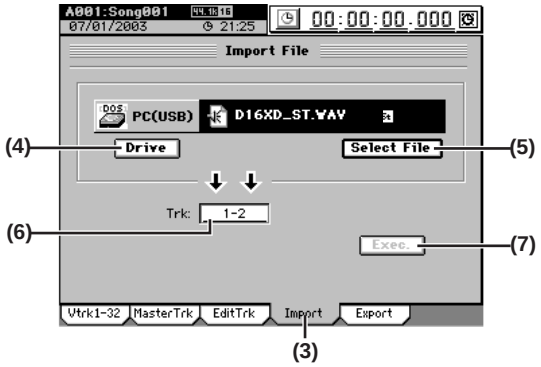
(1) Insert the disc containing the audio file into the CD-R/RW drive.

(2) Select the song into which you want to import the audio file. (→p.37 "1-3. Selecting a song")

(3) Select the Import command.
Access the **TRACK**, **"Import"** tab page.

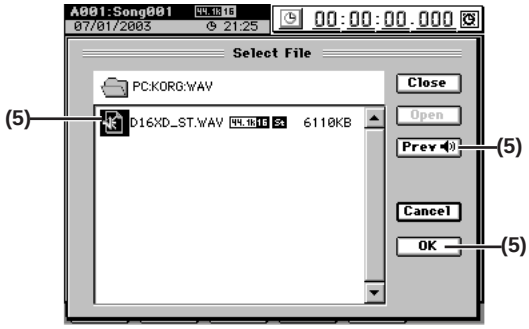
(4) Select the import-source drive.

- Press the **Drive** button to open the **Select Drive** dialog box.
- Select **"CD"** and press the **Yes** button.



(5) Select the audio file that you want to import.

- Press the **Select File** button to open the **Select File** dialog box.
- You can preview the first few seconds of the selected audio file by pressing the **Prev** button.
- Select **"D16XD_ST.WAV"** and press the **OK** button.



(6) Select the import-destination track number.
In the **"Import"** tab page, select tracks **"1-2"** in the **Trk** cell.

(7) Execute the import.

- Press the **Exec.** button to open the **Import File** dialog box.
- Since the import-source audio file has a different bit depth than the import-destination song, press the **Dither** button so that dithering will be performed.
- Press the **Yes** button to execute the import.
- When the operation is finished, the display will indicate **"Completed."** Press the **Yes** button.

The length of time required for this operation to be completed will increase in proportion to the size of the file being imported.

(8) Change the location to the beginning of the song, and verify that the data was imported correctly.

Importing an audio file into the middle of a track

i.e. **Importing a 44.1 kHz/16-bit stereo audio file named "D16XD_ST.WAV" from the PC drive, and loading it into the TO location (the location stored in the LOC3 key) of tracks 1 and 2 of a 44.1 kHz/16-bit song**

(1) Select the song into which you want to import the audio file. (→p.37 "1-3. Selecting a song")

(2) Select the Import command.
Access the **TRACK**, **"Import"** tab page.

(3) Select the import-source drive.

- Press the **Drive** button to open the **Select Drive** dialog box.
- Select **"PC"** and press the **Yes** button.

(4) Select the audio file that you want to import.

- Press the **Select File** button to open the **Select File** dialog box.
- You can preview the first six seconds of the selected audio file by pressing the **Prev** button.
- Select **"D16XD_ST.WAV"** and press the **OK** button.

(5) Select the clipboard as the import-destination track number.
In the **Trk** cell, select **"Clip."**

(6) Execute the import.
Press the **Exec.** button to open the **Import** dialog box, and press the **Yes** button to execute.
When the operation is finished, the display will indicate **"Completed."** Press the **OK** button.

The length of time required for this operation to be completed will increase in proportion to the size of the file being imported.

(7) Copy the imported audio file from the clipboard into tracks 1 and 2.

- Store the TO location (→p.38 "Assigning locations to the Locate keys").
- Refer to "Using the clipboard to copy data to another song" (→p.70), steps (9)–(14).

2-2. Exporting an audio file

Here's how to export an audio file.

note *When exporting to CD-R/RW, use either a blank disc or an ISO9660 format disc that has not been finalized.*

note *An audio file exported to CD-R/RW can be loaded by the D32XD/D16XD or by a computer even if the disc has not been finalized.*

note *A file exported to the PC drive can then be saved on your computer. To do so, first save the file on the PC drive of the D32XD/D16XD's hard disk, and then save that file onto your computer.*

Exporting an audio file

i.e. **Copying the audio data from the master track of a 96 kHz/24-bit song to the clipboard, and exporting it to the PC drive as a stereo audio file named "D16XD_ST.WAV"**

(1) Select a 96 kHz/24-bit song, and copy the master track audio data to the clipboard.

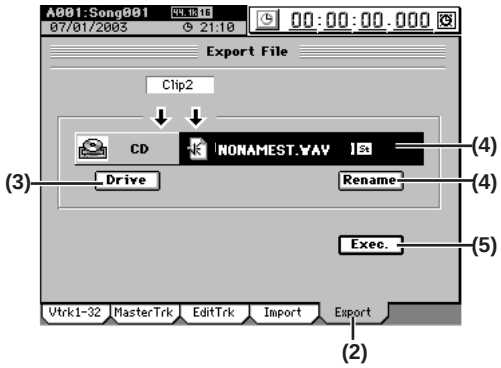
- Refer to "Using the clipboard to copy data to another song" (→p.70), steps (1)–(6).

(2) Select the Export command.
Access the **TRACK**, **"Export"** tab page.

(3) Select the export-destination drive.
Press the **Drive** button to open the **Select Drive** dialog box. Choose **"PC"** and press the **Yes** button.

(4) Rename the audio file.
A name of NONAMEST.WAV will be assigned automatically.
Press the **Rename** button to open the **Rename** dialog box, and change the name to D16XD_ST.WAV (→p.36). For details on the file names you can use, refer to "More about drives and files" (→p.173).

note *If the export-destination already contains an identically-named file, you will not be able to export the file.*



(5) Execute the export command.
Press the **Exec.** button. In the **Export** dialog box, press the **Yes** button to execute.
When the operation is finished, the display will indicate **"Completed."** Press the **OK** button.

Exporting multiple audio files

If you export four or more tracks in a single operation, all of them will be saved as monaural files.

i.e. Copying the audio data of tracks 1–16 from a 44.1 kHz/16-bit song to the clipboard, and exporting the data to CD-R/RW as sixteen monaural audio files named "D16XD_01.WAV"–"D16XD_16.WAV"

(1) Insert a disc in the CD-R/RW drive.

(2) Select a 44.1 kHz/24-bit song, and copy the tracks 1–16 audio data to the clipboard.

- Refer to "Using the clipboard to copy data to another song" (→p.70), steps (1)–(6).

(3) Select the Export command.
Access the **TRACK**, **"Export"** tab page.

(4) Select the export-destination drive.
Press the **Drive** button to display the **Select Drive** dialog box. Choose **"CD"** and press the **Yes** button.

(5) Rename the audio file.
Here the display will show the file name of the first track.
The names NONAME01.WAV–NONAME16.WAV will be assigned automatically.
Press the **Rename** button to open the **Rename** dialog box, and change the file name to D16XD_01.WAV (→p.36).
For details on the file names you can use, refer to "More about drives and files" (→p.173).

note *If an identically-named file already exists, you will be unable to execute this operation. Please change the file name.*

(6) Execute the export.

- Press the **Exec.** button to open the **Export File** dialog box, and specify the speed at which the data will be written to CD (→p.147).
- If you add a check mark to the **Finalize CD** check box, it will not be possible to add any further data to that disc (→p.147).

note *When exporting to CD-R/RW, the written data is automatically compared to ensure that an invalid backup CD is not created.*

- When the operation is finished, the display will indicate **"Completed."** Press the **OK** button.

3. Drive and data compatibility with the *Digital Recording Studio* series

In the Digital Recording Studio series, the D32XD and D16XD are compatible with each other, but the D32XD and D16XD are not compatible with the D12, D1200, D16, and D1600.
However, you can exchange WAV format audio files with the D12, D1200, D16, and D1600.

Using D16XD and D32XD data

D16XD backup data can be restored into the D32XD. Similarly, D32XD data can also be restored into the D16XD, but the following data will be ignored.

- Data for tracks 17–32 and mixer
- Mixer event automation data
- Group data
- Data for insert effects 9–24
- Data for AUX3/4 Send

Using D32XD/D16XD data on a different model

(1) On the D32XD/D16XD, export the data to a WAV format audio file. "2-2. Exporting an audio file" (→p.86)

(2) On the other device, import the WAV format audio file. (Refer to the manual for the device you are using.)

Using data from a different model on the D32XD/D16XD

(1) On the other device, export the data to a WAV format audio file. (Refer to the manual for the device you are using.)

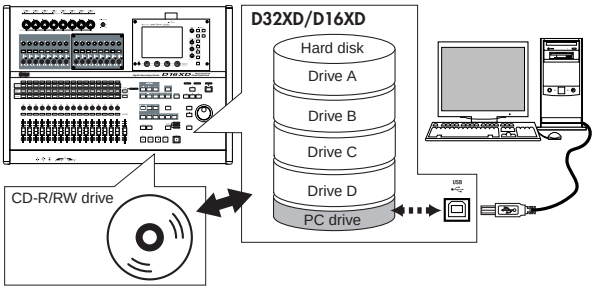
(2) On the D32XD/D16XD, import the WAV format audio file. "2-1. Importing an audio file" (→p.85)

Drive

The D32XD/D16XD's hard disk is divided into one, two or four song drives used to record and play back songs, and a PC drive used to exchange data with a personal computer.

note *2 GB of the total hard disk capacity is used as the PC drive.*

The D32XD/D16XD also has a built-in CD-R/RW drive that lets you write backup data or the audio data for a completed song to a CD, or load audio files or backup data from a CD.



The D32XD/D16XD provides the following utility functions for managing these drives.

Partition: Divide a song drive

Drive Info: View information about a song drive, or rename a drive

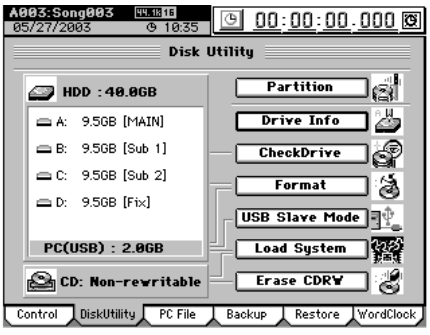
Check Drive: Check the hard disk

Format: Format the hard disk

USB Slave Mode: Transfer data to or from a computer

Load System: Update the system

Erase CDRW: Erase the data from a CD-RW disc



You can also check the size of files in the PC drive, and rename or delete them. (→p.91)

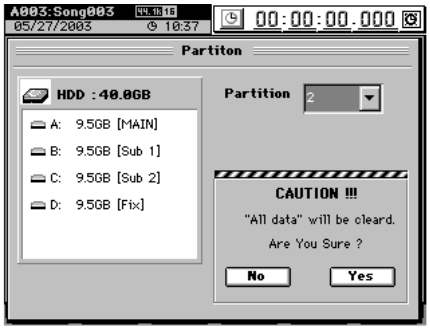
1. Partitioning the hard drive into separate song drives (Partitions)

You can divide the song drive area of the hard disk into one, two, or four individual song drives, or partitions, and assign a name to each of these song drives.

When you partition the hard disk, all data in the song drive area will be erased. However, the data on the PC drive will not be erased.

(1) Access the SYSTEM, "DiskUtility" tab page, and press the Partition button to display the Partition dialog box.

(2) Press the Partition list button and selectthe number of hard disk partitions you wish to create.



(3) Execute the Partition operation.
When you press the **Yes** button, the display will ask **"Are You Sure?"** Press the **Yes** button to begin the operation.

Partitioning will erase all data from the song drive area of the hard disk. When the operation is completed, the display will indicate **"Completed."** Press the **OK** button to return to the **"DiskUtility"** tab page.
The song drives are identified as A, B, C, and D.

2. Renaming a song drive

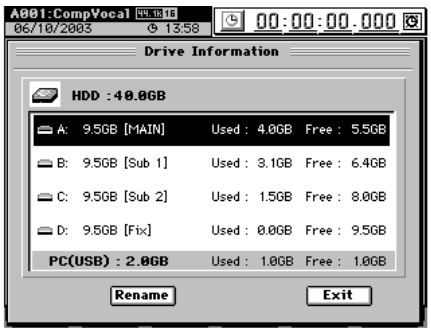
Here's how you can check the capacity of each song drive, and rename a song drive.

note *You can also rename a song drive in the **Select Drive** dialog box that appears when you press the **Drive** button in the **"Select-Song"** or **"Album CD"** tab page.*

(1) Access the SYSTEM, "DiskUtility" tab page.

(2) Press the Drive Info button to display the Drive Information dialog box.
For each drive, the dialog box displays the total capacity, song drive name, used area, and free area.

(3) If you want to rename a drive, select that drive in the song drive list, press the Rename button, and rename it in the Rename dialog box (→p.36).
For details on the file names you can use, refer to "More about drives and files" (→p.173).


A001:CompVocal
06/10/2003
13:58
00:00:00.000
Drive Information
HDD :40.0GB
A: 9.5GB [MAIN] Used : 4.0GB Free : 5.5GB
B: 9.5GB [Sub 1] Used : 3.1GB Free : 6.4GB
C: 9.5GB [Sub 2] Used : 1.5GB Free : 8.0GB
D: 9.5GB [Fix] Used : 0.0GB Free : 9.5GB
PC(USB) : 2.0GB Used : 1.0GB Free : 1.0GB
Rename
Exit

3. Checking the hard disk

This operation finds and fixes errors on a song drive of the hard disk. Perform this operation if **"Disk too busy."** errors still appear even after you have executed the Optimize track editing operation. After you perform this operation, if the "Disk too busy" error messages no longer appear, then, you will still be able to use the song data.

You cannot check the PC drive.

(1) Access the SYSTEM, "DiskUtility" tab page, and press the Check Drive button to display the Check Drive dialog box.

(2) Press one of the Area list buttons to specify the area that you want to check.

Current Song
Check and repair the area used by the currently selected song.

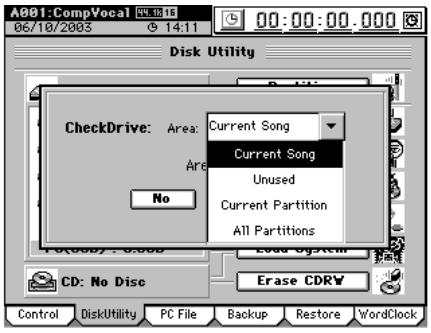
Unused
Of the unused area, check and repair the next 2 GB that will be used.

Current Partition
Check and repair the area of the currently selected song drive (partition).

All Partitions
Check and repair all partitions and the area used by the system.

(3) Execute the check.

- Press the **Yes** button to begin checking.
- If you want to stop mid-way through the check, press the **Cancel** button.
- When the operation is completed, the display will indicate **"Completed."** Press the **OK** button.



If a message such as **"Repaired successfully.," Drive Error occurred.,"** or **"Repaired, but some audio data was lost."** appears, refer to "Various messages" (→p.170).

4. Formatting the hard disk

Perform this procedure if you want to erase data from an entire song drive or the PC drive, or if the **"Drive Error occurred."** display appears frequently and checking the hard disk does not improve the situation. You can format the song drive and PC drive together in a single operation, or format them separately.

When you execute the Format operation, all data on the disk will be erased. Be sure to check the contents of the disk before you format it.

If a power failure or similar accident occurs during the formatting process, it is possible that the D32XD/D16XD will no longer operate correctly. If this occurs, please contact your Korg distributor.

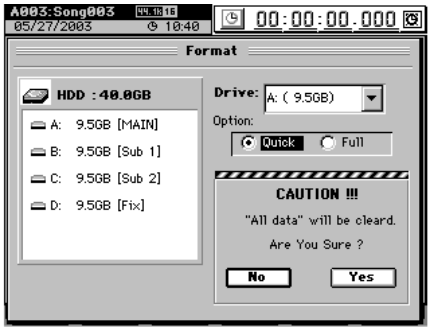
(1) Access the SYSTEM, "DiskUtility" tab page, and press the Format button to display the Format dialog box.

(2) Press the "Drive" popup button, and select the drive that you want to format.
A...D: the specified individual song drive
PC: the PC drive
A-D: all song drives
ALL: the entire hard disk

(3) Select the desired method.

Quick: Use this when you want to erase the data saved in an individual song drive or the PC drive. This operation will take only a short time.
ALL → approximately 7 seconds: 40 GB

Full: Use this if the **"Drive Error occurred"** error message occurs frequently, or if error messages appear even after you perform the "Check Drive" operation. This operation will take a long time to be completed.
ALL → approximately 7 hours: 40 GB



(4) Press the Yes button. The display will ask "Are You Sure?" To execute the operation, press the Yes button.

- If you decide not to format, press the **No** button.
- Formatting will erase all data from the selected drive.
- When the operation is completed, the display will indicate **"Completed."** Press the **OK** button.

5. Exchanging data with your computer

Use USB Slave Mode to transfer data between your computer and the PC drive.
For the procedure refer to "USB" (→p.92).

6. Erasing a CD-RW disc

This operation erases the data that was written on a CD-RW disc.
Erasing a disc lets you use the entire capacity of the disc, just as when it was unused (blank).

When you execute this operation all data will be erased from the CD-RW disc.

This operation cannot be performed on any disc other than a CD-RW disc.

(1) Insert the CD-RW disc into the CD-R/RW drive.

(2) Access the SYSTEM, "DiskUtility" tab page and press the Erase CDRW button to display the Erase CDRW dialog box.

(3) Select the desired method.

Quick: Erase the CD-RW disc at high speed.

Full: Erase the CD-RW disc completely. Use this method if you experience problems such as the disc failing to be recognized after being formatted by Quick. This method requires a longer time.

(4) To execute the erasure, press the Yes button to begin.

- If you decide not to erase the CD-RW, press the **No** button.
- When the operation is finished, the display will indicate **"Completed."** Press the **OK** button.

note *You can erase a disc in the same way by using the **CD**, **CD WRITER**, "**CD Utility**" tab page **Erase** button.*

(5) Access the CD, CD WRITER, "CD Utility" tab page and press the Get Information button.
The **Drive Information** dialog box will indicate **"Blank."**

7. Load system

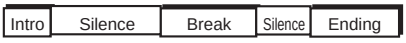
This lets you easily update the operating system of the D32XD/D16XD. For the update procedure, refer to "Upgrading the system" (→p.95).

8. Drive capacity

This section explains how you can make the best use of the D32XD/D16XD's song drive capacity. For explanatory purposes, we will assume that you have recorded a song with the following structure.

note *The Optimize Track operation described here does not need to be performed often. It is sufficient to perform this operation when the **"Disk too busy."** indication appears, or when you want to recover disk drive capacity after completing a song.*

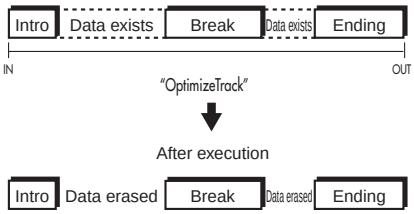
i.e. 1. You began recording on track 1 from the beginning of the song, and only played during the Intro, Break, and Ending on the first take.



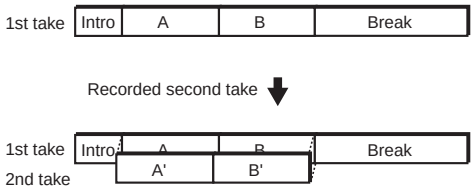
In this case, silence (actually, noise-level sound) will have been recorded in the A, B, and Solo sections of track 1, unnecessarily using up valuable drive space.

To keep only the audio data that you are actually using

Execute the Optimize Track operation on track 1, from the beginning of the song to the end of the song. Set the Optimize Track **"Mode"** parameter to **"Erase Silence,"** and execute. This will cause audio data to be preserved only for the actually-used regions, so that only the intro, break, and ending will occupy drive space.



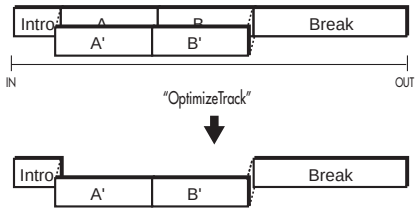
i.e. 2. You began recording on track 1 from the beginning of the song, and played the Intro, A, B, and Break during the first take, and then recorded a second take, overwriting the original A and B with A' and B'.



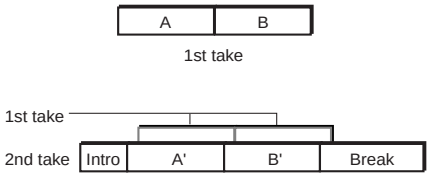
In this case, A and B of the first take remain "beneath" A' and B' of track 1, in order to preserve the data for Undo and also because they are a continuous piece of audio data with the Intro and Break. This means that Intro, A+A', B+B', and Break are all occupying disk space.

To erase A and B that remain from the first take, and recover disk space

Execute the Optimize Track command on track 1 from the beginning to the end of the song. At this time, set the optimize track **"Mode"** to **"Normal."**
When this is executed, only the audio data of the Intro, 2nd take of A (A'), 2nd take of B (B'), and the Break will be kept. This means that the 1st take of A and 1st take of B data will no longer occupy disk space.



i.e. 3. You recorded A and B on track 1 as the first take. As the second take, you overwrite-recorded the Intro, A', B', and Break.



In this case, the first take A and B remain "beneath" A' and B', but since the audio data of take 1 is not used at all once you finished recording take 2, there is no need to execute the optimize command.

Deleting the Undo data

Even if you use the drive space efficiently as described above (i.e.), the old data will be kept on the drive for use by the Undo function.
To delete this undo data, either press the **Clear** button in the **"Undo/Redo"** tab page (→p.147), or put the D32XD/D16XD in standby mode (shut down). After restarting, all undo data will be deleted, recovering free space on the drive.
Be aware that restarting the D32XD/D16XD will delete the undo data of all the songs.

Sharing event data

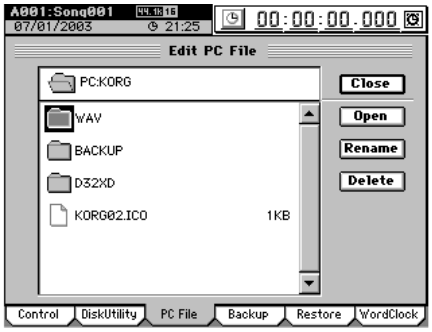
If you use the Copy Track operation to copy track data to another track (e.g., virtual track) or another song, this audio data will be shared, so that the drive capacity will not decrease. However if you execute the Optimize Track operation on the copy-destination or copy-source track, new audio data will be created, and this will mean that a greater amount of drive capacity will be used than before the operation was executed.

In the case of i.e. 2 above, if you copy the first take to another track before you record the second time, then executing the Optimize Track operation will not delete the "A" and "B" regions of the first take, and new audio data for the "Intro" and "Break" regions will be created, meaning that a greater amount of drive capacity will be used.

9. PC drive

The size of the PC drive is fixed at 2 GB.
You can use the **SYSTEM**, **"PC File"** tab page command to check, rename, or delete files on the PC drive.
The PC drive contains the following folders, which contain the following files.

- **BACKUP folder:** backup files
- **WAV folder:** audio files in WAV format
- **D32XD folder (D16XD folder):**
  This folder contains system files for updating the system.



Checking, renaming, or deleting files

You can check the size, rename, or delete files that are on the PC drive.

(1) Access the SYSTEM, "PC File" tab page.
To move to a lower level, select a folder and press the **Open** button.
To return to the next upper level, press the **Close** button.

(2) To rename a file, select the file, press the Rename button, and rename the file (→p.36).
For details on the file names you can use, refer to "More about drives and files" (→p.173).

(3) To delete a file, select the file and press the Delete button.

- The display will ask **"Are You Sure?"** Press the **Yes** button to delete the file.
- If you decide not to delete the file, press the **No** button.
- When the file has been deleted, the display will indicate **"Completed."** Press the **OK** button.

USB

USB stands for **U**niversal **S**erial **B**us, and is an interface for transferring data between a computer and peripheral devices.

USB peripheral devices such as hard disks or CD-R/RW drives cannot be connected to the D32XD/D16XD.

The D32XD/D16XD has a **USB** connector which can be connected directly to your computer, allowing you to save data from the PC drive to your computer, or load data from your computer to the PC drive.

1. Saving/loading

Do not format the D32XD/D16XD's PC drive from your computer. This may be formatted only by the D32XD/D16XD itself (→p.89).

Windows users (Windows Me/2000 or later)

In order to use the D32XD/D16XD with Windows 98, you must install a device driver. For details on obtaining and installing the device driver, refer to the Korg website (http://www.korg.com).

note *The computer screen will differ depending on your system. The screens shown here are for Windows XP.*

(1) Use a USB cable to connect the D32XD/D16XD to your computer.
Connect the USB cable from your computer to the D32XD/D16XD's USB connector. Make sure that the connector is oriented correctly, and press it all the way in.

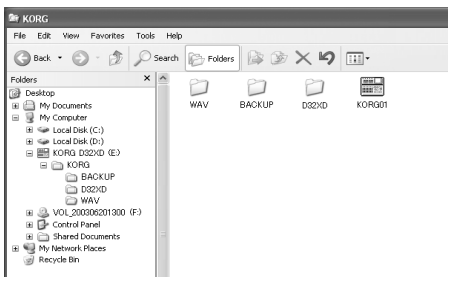
Before you make this connection, turn on your computer and start up the operating system.

(2) Access the SYSTEM, "DiskUtility" tab page.

(3) Press the "USB Slave Mode" button to display the USB Slave Mode dialog box.

Do not disconnect the USB cable or turn your computer on/off while this screen is displayed.

(4) A drive named "KORG D32XD [*D16XD]" will appear on your computer.



note *When you connect the D32XD/D16XD to your computer for the first time, a device driver will be installed.*

(5) Use your computer to save the data.
When you open the "KORG D32XD [*D16XD]" drive that appeared in step (4), you will see the contents of the PC drive area within the D32XD/D16XD's internal hard disk.
Copy the desired data onto your computer. You may also copy data from your computer back to the D32XD/D16XD's PC drive.

(6) Disconnect the D32XD/D16XD from your computer.
Left-click the ( ) icon that is displayed in the right side of your computer's taskbar.

From the menu that appears, left-click "Stop USB disk drive (KORG D32XD [*D16XD])." Verify that you see a message of "Safely remove USB Mass Storage Device." Press the **Exit** button of the **USB Slave Mode** screen. After you have exited USB Slave mode, unplug the USB cable from the D32XD/D16XD.

note *If you are using Windows Me, "USB high capacity storage device" will be displayed as "PC drive."*

Macintosh users (Mac OS9.0.4 or later)

(1) Use a USB cable to connect the D32XD/D16XD to your computer.
Connect the USB cable from your computer to the D32XD/D16XD's USB connector. Make sure that the connector is oriented correctly, and press it all the way in.

(2) Access the SYSTEM, "DiskUtility" tab page.

(3) Press the "USB Slave Mode" button to display the USB Slave Mode dialog box.

Do not disconnect the USB cable or turn your computer on/off while this screen is displayed.

(4) A drive named "KORG D32XD [*D16XD]" will appear on the desktop of your computer.

note *When you connect the D32XD/D16XD to your computer for the first time, a device driver will be installed.*

(5) Use your computer to back up the data.
When you open the "KORG D32XD [*D16XD]" drive that appeared in step (4), you will see the contents of the PC drive area within the D32XD/D16XD's internal hard disk. Copy the desired data onto your computer. You may also copy data from your computer back to the D32XD/D16XD's PC drive.

(6) Drag the added drive into the trash.
When you want to disconnect the D32XD/D16XD, either drag the drive from the desktop into the trash, or select the "Special" menu command "Eject." Press the **Exit** button of the **USB Slave Mode** screen to exit USB Slave mode, and then unplug the USB cable from the D32XD/D16XD.

MIDI

MIDI stands for **M**usical **I**nstrument **D**igital **I**nterface, and is a world-wide standard used to exchange performance data between electronic musical instruments and computers.

1. MIDI connections

Use only MIDI cables to transfer MIDI data. Connect these cables between the MIDI connectors of the D32XD/D16XD and the MIDI connectors of the external MIDI device with which you want to transfer data.

MIDI IN connector
Receives MIDI messages from another MIDI device. Connect this to the MIDI OUT connector of the external device.

MIDI OUT connector
Transmits MIDI messages from the D32XD/D16XD. Connect this to the MIDI IN connector of the external device.

MIDI channel settings

MIDI uses sixteen channels (1–16) to independently convey data to multiple MIDI devices. If the transmitting device is sending data on MIDI channel "1," the receiving device must also be set to MIDI channel "1" in order to receive this data. (→p.132 "GlobalCh")

2. MIDI messages used by the D32XD/D16XD

Note On (Note, velocity), aftertouch, pitch-bend:
The D32XD/D16XD uses these messages to control effects.

Program change:
The D32XD/D16XD uses these messages to switch scenes.

Control change:
The D32XD/D16XD uses these messages to control mixer and effect parameters.

MMC (MIDI Machine Control):
MMC messages can be transmitted from the D32XD/D16XD to control an external MMC-compatible sequencer or recorder. MMC messages can be transmitted from an external sequencer or recorder to control the D32XD/D16XD.

MTC (MIDI Time Code):
The D32XD/D16XD can transmit or receive MTC messages to synchronize with an external sequencer or recorder.

About the MIDI implementation chart

The owner's manual of each MIDI device includes a MIDI implementation chart. This chart shows the types of MIDI message that the device can transmit and receive. When using two MIDI devices together, compare their MIDI implementation charts to verify that the devices will be able to communicate as you expect.

* *A detailed explanation of the D32XD/D16XD's MIDI functionality can be found in the separate MIDI implementation. Consult your local Korg distributor for more information on MIDI Implementation.*

3. Using MIDI

Controlling the D32XD/D16XD from a MIDI sequencer

You can use MMC messages transmitted and received from a MIDI sequencer to control D32XD/D16XD operations such as stop, play, fast-forward, rewind, record, and locate.

note *You must use a sequencer that supports MMC. These operations cannot be performed from a sequencer that does not support MMC.*

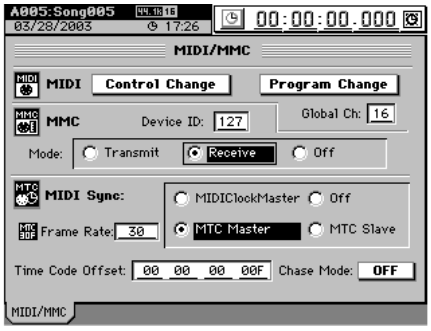
(1) Use a MIDI cable to connect the two devices.
Using a MIDI cable, connect your MIDI sequencer's MIDI OUT connector to the D32XD/D16XD's **MIDI IN** connector.

(2) Adjust the settings on your MIDI sequencer.
Set your sequencer to transmit MMC and to receive MTC (MTC Slave). For details, refer to the owner's manual of your MIDI sequencer.

(3) Turn on MMC reception.
In the **MIDI/SYNC**, **"MIDI/MMC"** tab page, set **"MMC Mode"** to **"Receive,"** and set **"MIDI Sync"** to **"MTC Master."**

(4) Set the device ID to match.
Set the **"Device ID"** to match the MMC device ID of your MIDI sequencer.

note *If you leave the "**Device ID**" set to 127, MMC commands can be exchanged with any device.*



(5) Operate your external MIDI sequencer.
When you perform stop, play, fast-forward, rewind, record, and locate operations on your MIDI sequencer, the D32XD/D16XD will be controlled. (For details, refer to the manual of your MIDI sequencer.)

Synchronizing two D32XD or D16XD units

Here's how you can make two D32XD or D16XD units play back in sync. One D32XD/D16XD will be the MTC master, and the other will be the MTC slave.

(1) Use a MIDI cable to connect your equipment.
Connect a MIDI cable from the master device's **MIDI OUT** connector to the slave device's **MIDI IN** connector.

(2) Make settings on the master D32XD/D16XD.
In the **MIDI/SYNC**, **"MIDI/MMC"** tab page, set **"MIDI Sync"** to **"MTC Master,"** and set **"MMC Mode"** to **"Receive."**
For this example, set **"Device ID"** to **"10."**

(3) Make settings on the slave D32XD/D16XD.
In the **MIDI/SYNC**, **"MIDI/MMC"** tab page, set **"MIDI Sync"** to **"MTC Slave,"** and set **"MMC Mode"** to **"Transmit."** Set **"Device ID"** to **"10"** to match the setting of the master device. Press the **PLAY** key of the slave D32XD/D16XD to put it in playback-ready mode.

note *If you don't want the slave device to receive mixer control messages, you can either disable transmission on the master device or disable reception on the slave device. (→"Using MIDI to control the mixer")*

(4) Press the PLAY key of the master D32XD/D16XD.
The slave D32XD/D16XD will receive time code, and when it has synchronized to the time code of the master device, the slave D32XD/D16XD will begin playback.

note *It may take several seconds for synchronization to be achieved.*

Using MIDI to control the mixer

i.e. Recording D32XD/D16XD mixer operations on your external MIDI sequencer

(1) Use a MIDI cable to connect the two devices.
Use a MIDI cable to connect the D32XD/D16XD's **MIDI OUT** connector to the MIDI IN connector of your external MIDI sequencer.

(2) Adjust the synchronization settings on the D32XD/D16XD and on your external MIDI sequencer.
Access the **MIDI/SYNC**, **"MIDI/MMC"** tab page, and set **"MIDI Sync"** to **"MIDIClockMaster"** or **"MTC Master."**
Adjust the synchronization settings on your external MIDI sequencer as well. (For details, refer to the manual of your MIDI sequencer.)

(3) Enable control change transmission on the D32XD/D16XD.
- Turn the **"MIDI"** parameter **"Control change"** on.
- To transmit scene change messages, in the **SCENE "Automation [*EditScene]"** tab page, turn **"Automation"** ON. In the **MIDI/SYNC**, **"MIDI/MMC"** tab page, turn the **"MIDI"** parameter **"Program Change"** ON.

(4) Put the external MIDI sequencer in record-ready mode.
The D32XD/D16XD's mixer control data is transmitted on MIDI channels 1–16, corresponding to tracks 1–16. Adjust the settings on your external MIDI device so that it will record all MIDI channels 1–16. (For details, refer to the owner's manual of your MIDI sequencer.)

note *For details on the parameters, refer to the MIDI implementation. Consult your local Korg distributor for more information on MIDI Implementation.*

(5) Begin recording.
Press the D32XD/D16XD's **PLAY** key to begin playback, and the external MIDI sequencer will begin synchronized recording. Now if you operate the mixer parameters (faders, pan, EQ etc.), the corresponding control change messages will be transmitted from the D32XD/D16XD and will be recorded on the external MIDI sequencer.

(6) Stop the D32XD/D16XD.
When you press the D32XD/D16XD's **STOP** key to stop playback, the external MIDI device will also stop recording. The D32XD/D16XD's mixer parameter operations have now been recorded on the external MIDI device.

i.e. Receiving the mixer operations recorded above in "i.e. Recording D32XD/D16XD mixer operations ..." from your external MIDI sequencer to control the D32XD/D16XD mixer

(1) Use a MIDI cable to connect the two devices.
Use a MIDI cable to connect the D32XD/D16XD's **MIDI IN** connector to the MIDI OUT connector of your external MIDI sequencer.

(2) Adjust the synchronization settings on the D32XD/D16XD and on your external MIDI sequencer.
Access the **MIDI/SYNC**, **"MIDI/MMC"** tab page, and set **"MIDI Sync"** to **"MTC Master."**
Set your external MIDI sequencer to function as MTC Slave. (For details, refer to the manual of your MIDI sequencer.)

(3) Enable control change reception on the D32XD/D16XD.
- In the **MIDI/SYNC**, **"MIDI/MMC"** tab page, turn the **"MIDI"** parameter **"Control Change"** on.
- In the **SCENE**, **"Automation [*EditScene]"** tab page, turn **"Automation"** off.

(4) Press the PLAY key of the D32XD/D16XD to put it in playback-ready mode (blinking green).

(5) Play back your external MIDI sequencer.
When the external MIDI sequencer begins playback, the D32XD/D16XD will begin playback in synchronization (the **PLAY** key will light green).
The previously-recorded mixer operation data will be transmitted from the MIDI sequencer, causing the settings of the D32XD/D16XD's mixer to change.

Upgrading the system

1. Downloading the operating system

The most recent operating system can be downloaded from the Korg website (http://www.korg.com). For details on the procedure, refer to the Korg website.

Upgrading via CD-ROM/R/RW

Insert the media containing the system file into the CD-R/RW drive.

Upgrading via USB

Use a USB cable to connect the D32XD/D16XD to your computer, and copy the system files to the D32XD [*D16XD] folder of the PC drive.

2. Upgrading the system

(1) Access the SYSTEM, "DiskUtility" tab page.

(2) Specify the loading source for the system file.
Press the **Load System** button to display the **Load System** dialog box. Press either the **"CD"** or **"PC"** radio button to specify the loading source.

(3) Press the Yes button to begin the update.

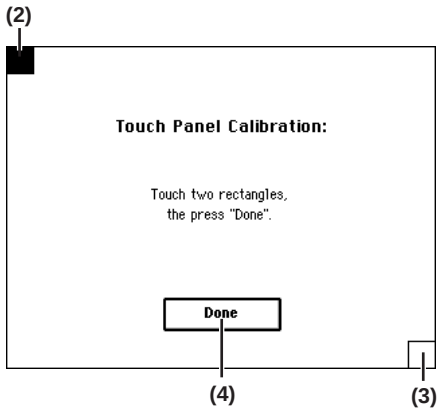
If an unexpected accident such as power failure occurs while updating the system, the D32XD/D16XD may become incapable of normal operation. In such cases, please contact Korg distributor.

(4) When the upgrade is finished, the D32XD/D16XD will automatically restart using the new system.
If the upgrade fails, the D32XD/D16XD will display an message and will not restart. Note the contents of the message (→p.170 "Various messages").

Touch Panel Calibration

If the LCD screen does not respond as you expect, or if pressing the LCD screen selects a button or cell at a different location, you can perform this procedure to re-align the LCD screen with the touch panel.

(1) In the SYSTEM, "Control" tab page, press the Calibration button.
The **Touch Panel Calibration** dialog box will appear.



(2) Press the square in the upper left of the LCD.
When your touch has been detected correctly the square will be highlighted.

(3) Press the square in the lower right of the LCD.
When your touch has been detected correctly the square will be highlighted.

(4) Press the Done button.

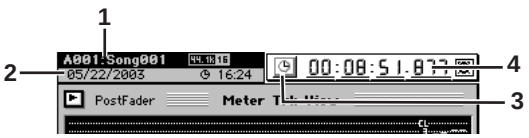
If your touch was not detected correctly, an error message will appear. Please perform the procedure once again.

Reference

Counter

Counter display

Press the counter button, and select the desired counter display method in the **Time Disp Type** dialog box.



1. **Song display**
   Displays the song drive name, song name, sampling frequency, and bit depth.
2. **Information display**
   Displays date, remaining recordable time, scene, mark, and tempo map data.
3. **Counter button**
   Press this to display the **Time Disp Type** dialog box.
4. **Counter display**
   Displays the current recorder location and measure.

Time Disp Type dialog box

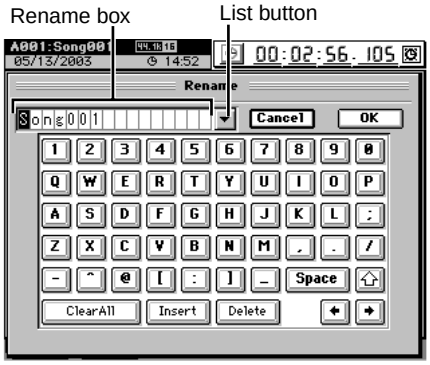
1. **Location radio buttons**
   These select the format and type of units used in the counter display.
   Time display ____:____:___.___ (HMSm)
   The current location is shown as absolute time from the beginning of the song. From the left, this shows Hours: Minutes: Seconds. milliseconds (1/1000 seconds).
   * Maximum value is 23:59:59.999
   Frame display ___:___.___.__F (HMSF)
   The current location is shown as absolute time and frames from the beginning of the song. From the left, this shows Hours: Minutes: Seconds. Frames (the "Frame Rate" setting of p.132).
   * Maximum value is 23:59:59.29F (when using 30 frames/second)
   Measure display __:__.__ (MBT)
   The current location is shown as the number of measures from the beginning of the song. From the left, this shows Measures:Beats.Ticks (1/96th beat)
   * Maximum value is 99999:03.095 (for a 4/4 time signature)
2. **Information display radio buttons**
   These select the information that will be shown in the information display.
   Date Time:
   Calendar display, showing the current year/month/date and time (hours and minutes).
   Free Time:
   Displays the amount of recording time available on the currently selected drive. From the left, this indicates hours, minutes, and seconds.
   Scene:
   Displays the currently-used scene name and scene location.
   Mark:
   Displays the currently-used mark name and mark location.
   TempoMap:
   Displays the currently-used rhythm.

Rename

Editing a name

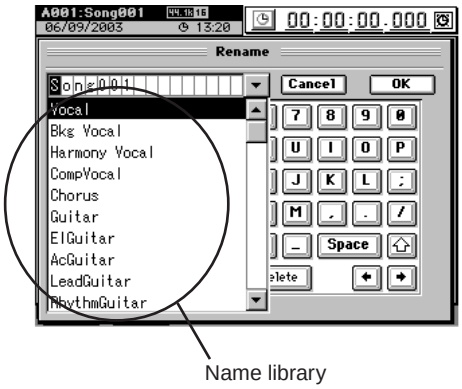
When the **Rename** button is displayed in a parameter setting tab page (such as Song, Track, Effect, Scene), you can press the button to edit the corresponding name.
Alternatively, you can choose an appropriate name from the name library and then edit it.
Highlight the name you want to edit, and press the **Rename** button. The **Rename** dialog box will appear, allowing you to edit the name. You can input a name of up to sixteen characters. Certain limitations apply to the backup or export filename (→p.174).

← →	Moves the highlighted cursor left or right in the rename box
Space	Inserts a space at the highlighted area
⇧	Switches between uppercase and lowercase characters
Delete	Deletes the character at the highlighted area
Insert	Inserts a blank at the right of the highlighted area
ClearAll	Erases all characters in the rename box
OK	Finalizes the name that you input
Cancel	Discards the name that you input
0…9, A…Z/…@	Inputs the numeral, character, or symbol at the highlighted location



Using the name library

When you press the list button beside the name, the name library will appear. Use the scroll bar to display the name you want to use, and press that name to input it in the list box.
For details on the name library, refer to "Name Library List" (→p.186).

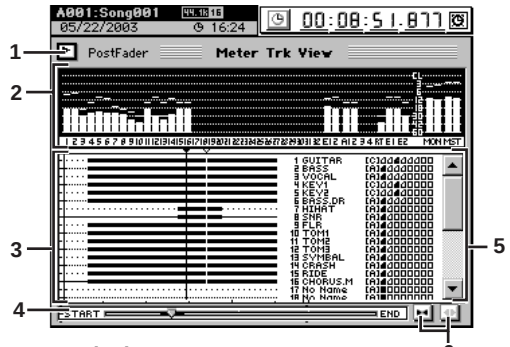


1. METER

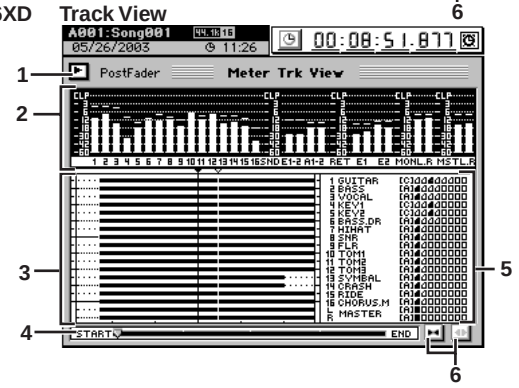
Meter Trk View

This displays the level meters and a list of the virtual tracks that shows whether any of them contain audio events. By changing the **"Meter Trk Type"** settings you can switch the signal shown by the level meters, or select a **"Fader View"** that shows fader and pan values.
The audio event locate points (IN, OUT, TO, END) are also displayed in this screen.

D32XD Track View



D16XD Track View



1. Display select button
Press this button to display the **Meter Trk Type** dialog box, where you can select the information you want to view. Press the **OK** button to apply your selections, or press the **Cancel** button to discard them.

1a. Select Level Meter Position
[CH-Input, PreFader, PostFader]

Ch-Input: Displays the input level of each mixer channel

PreFader: Displays the pre-fader level of each mixer channel

PostFader: Displays the post-fader level of each mixer channel

1b. Peak Hold Time **[0…8s, ∞]**
Specifies the amount of time that peaks will continue to be displayed in the level meter.
0…8s: 0–8 seconds
∞: Continue holding the peaks
This setting applies to the level meters in each page.

1c. Select View **[TrackView, FaderView]**
Changes the content of the meter display.
TrackView: Shows the level meters, existence of audio events, and a list of virtual tracks
FaderView: Shows the level meters, and fader/pan/channel-on status of each track

2. **Level meters**
These display the levels of the channels, sends, and monitor signals etc.

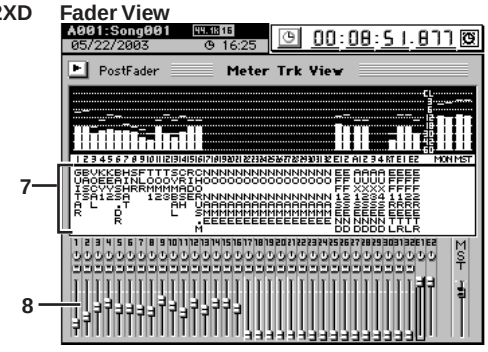
3. **Track view window**
In each track, regions that contain audio data are displayed in black.
The vertical line indicates the current location.
The top portion shows the locate points (→p.38).
IN: ▼ OUT: ▲ TO: ▽ END: △

4. **Time location display**
This bar indicates the entire song from the zero point to the end point. This gives a relative indication of the current location.

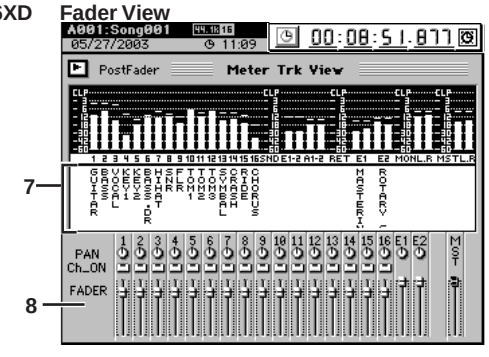
5. **Track status window**
This area shows the name of each track and the status of its virtual tracks. Virtual tracks displayed in black are currently in use.

6. **Scale buttons**
Use these buttons to magnify or shrink the area displayed in the track view window.

D32XD **Fader View**



D16XD **Fader View**



7. **Name window**
This displays the names of each track and of the master effects.

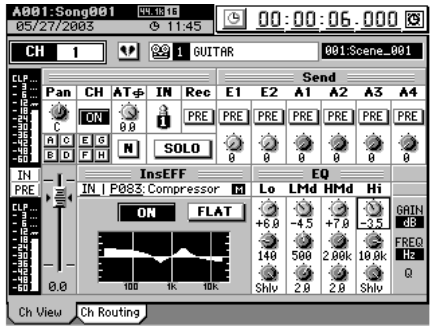
8. **Pan/Fader view**
Here you can view and edit the following parameters.
Faders, CH ON, pan, EFF 1/2 Return Level, EFF 1/2 Return Balance

2. CH VIEW

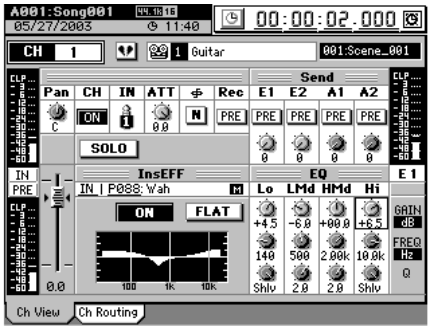
2-1. Ch View

This displays the settings and status for a single channel.
Press one of the **CH SELECT** keys to select the channel that will be displayed.

D32XD



D16XD



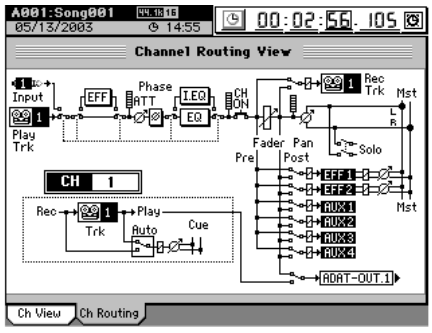
In this screen you can set the following parameters.

- Pairing (→p.102)
- Pan (→p.103, [*107])
- Channel on/off (→p.8)
- Input (→p.100)
- Attenuator (→p.109)
- Phase (→p.110)
- Recording location (→p.111, [*113])
- Solo on/off (→p.113)
- EQ on/off, flat (→p.109)
- Fader (→p.103, [*107])
- Level meter position (→p.97)
- Group (→p.103) D32XD
- Send (→p.112)
- EQ (→p.109)

Send and EQ parameters can also be edited using the Send and equalizer knobs and keys located at the right of the display.

2-2. Channel Routing View

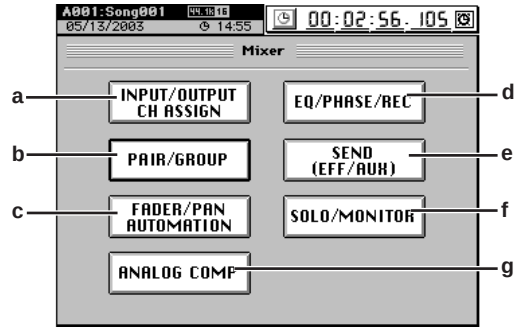
This displays a simplified signal flow for the channel shown in the **"Ch View"** tab page.
You cannot edit the settings here.
Press one of the **CH SELECT** keys to select the channel that will be displayed.



3. MIXER

Here you can adjust the settings for the mixer section.
When you press the **MIXER** key, the MIXER page jump menu screen will appear.
Press the menu button that contains the parameters you want to edit.
To return to this page jump menu screen, press the **MIXER** key.

D32XD



a. INPUT/OUTPUT/CH ASSIGN button
Opens the **INPUT/OUTPUT/CH ASSIGN** page mode screen (see below)

b. PAIR/GROUP button
Opens the **PAIR/GROUP** page mode screen (→p.102)

c. FADER/PAN/AUTOMATION button
Opens the **FADER/PAN/AUTOMATION** page mode screen (→p.103)

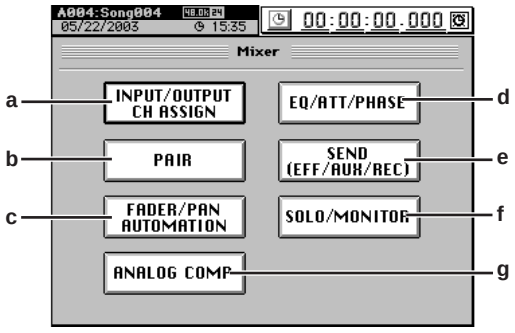
d. EQ/PHASE/REC button
Opens the **EQ/PHASE/REC** page mode screen (→p.109)

e. SEND (EFF/AUX) button
Opens the **SEND (EFF/AUX)** page mode screen (→p.112)

f. SOLO/MONITOR button
Opens the **SOLO/MONITOR** page mode screen (→p.113)

g. ANALOG COMP button
Opens the **ANALOG COMP** page mode screen (→p.115)

D16XD



a. INPUT/OUTPUT/CH ASSIGN button
Opens the **INPUT/OUTPUT/CH ASSIGN** page mode screen (see below)

b. PAIR button
Opens the **PAIR** page mode screen (→p.102)

c. FADER/PAN/AUTOMATION button
Opens the **FADER/PAN/AUTOMATION** page mode screen (→p.103)

d. EQ/ATT/PHASE button
Opens the **EQ/ATT/PHASE** page mode screen (→p.109)

e. SEND (EFF/AUX/REC) button
Opens the **SEND (EFF/AUX/REC)** page mode screen (→p.112)

f. SOLO/MONITOR button
Opens the **SOLO/MONITOR** page mode screen (→p.113)

g. ANALOG COMP button
Opens the **ANALOG COMP** page mode screen (→p.115)

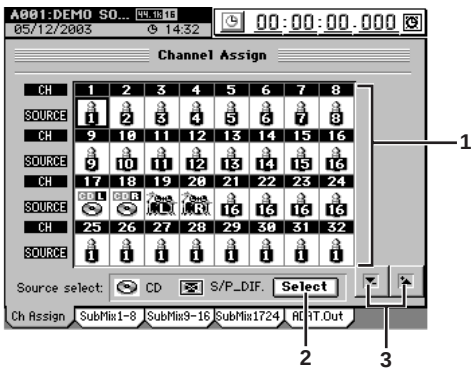
3a. INPUT/OUTPUT/CH ASSIGN

3a-1. Channel Assign

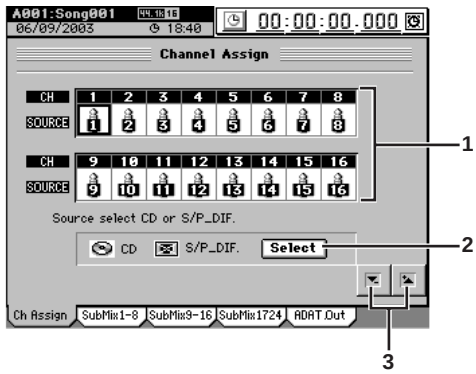
Here you can specify the input for each mixer channel 1–32 [*16].

When you select a digital input such as S/P DIF or ADAT, noise may occur if the digital data is not synchronized. You should turn down these faders or turn down the volume of your monitor system before you change these settings.

D32XD



D16XD



1. CH1…32 [*16] **[1…16, CD L, CD R, L, R, Rhythm L, R, A1…8]**

The number of assignable channels will depend on the sampling rate and bit depth of the current song (→p.136).

You can select the input sources 9…16 or ADAT 1…8 only if the 8-channel analog input board or the ADAT I/O board options are installed respectively.

Select a channel icon **"CH1"–"CH32 [*16],"** and then select the source that will be input to this channel.

INPUT 1…16: 1 … 16
The analog signal from an instrument etc. connected to the INPUT 1/GUITAR IN–INPUT 16 jacks will be input to the mixer channel.

CD L, R: CD L, CD R
The audio track of audio CD inserted in the internal CD-R/RW drive will be input to the mixer channel.
You can select this if **"Source Select CD or S/P DIF"** is set to **"CD."**

S/F DIF L, R: L, R
The digital signal from a device (e.g., DAT) connected to the S/P DIF IN jack will be input to the mixer channel.
You can select this if **"Source Select CD or S/P DIF"** is set to **"S/P DIF."**

Rhythm L, R: RHY L, RHY R
The rhythm selected by **"Rhythm Pattern"** will be input to the mixer channel. If the **"Rhythm," "Assign"** is set to **"CH Input"** and the **Rhythm On** button is on, the rhythm will sound. You can record this rhythm. (→p.133)

A1…A8: A1 ... A8
The signal from an external ADAT device connected to the ADAT connector will be input to the mixer channel.

You cannot assign ADAT input if the current song is 96 kHz/24-bit.

2. Source Select CD or S/P DIF
Press the **Select** button to display the **Source Select** dialog box.
Here you can select either **"CD"** or **"S/P DIF"** as the digital INPUT source.
A message of **"Obey Copyright Rules"** will appear. Carefully read the section "COPYRIGHT WARNING" (→p.iii) in the manual, and press the **OK** button if you accept the terms. Digital input will be enabled.
If selecting **"S/P DIF"** causes a message of **"Audio Sync Error"** to appear, and/or there is something wrong with the sound, add a check mark to the **"Change Sync source S/P DIF"** check box.

*If "**Audio Sync Error**" appears even when "**Change Sync source S/P DIF**" is checked, verify that in the **SYSTEM**, "**Word Clock**" tab page, the "**Word Clock**" frequency is the same as the sampling frequency of the current song.*

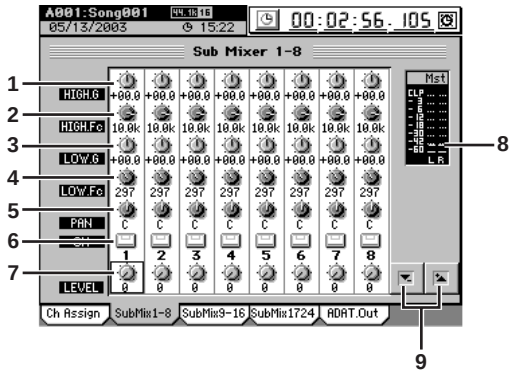
*If "**Change Sync source S/P DIF**" is checked, the D32XD/D16XD will stop operating if synchronization is interrupted during recording/playback or if the synchronization frequency changes. If the D32XD/D16XD stops operating due to a synchronization problem during recording, please format that song drive.*

3. ▼ / ▲ buttons
Use these up/down buttons to select the INPUT source.

3a-2. Sub Mixer 1–8

These settings allow you to use the inputs as "sub inputs" for inputting the return from an external effect to the INPUT 1/GUITAR IN–INPUT 8 jacks, or so that the sound of an instrument connected to these jacks can be mixed with the track playback. (→p.45)
After completing a song on the D32XD/D16XD, you can synchronize a sequencer to the D32XD/D16XD and use sub inputs to mix the sequenced sounds with the track playback of the D32XD/D16XD.
These inputs are sent to the master bus.

Use the AUX OUT jack to transmit the effect send to your external effect processor. (→p.112)



1. **HIGH.G** **[–15 dB…+15 dB]**
   Sets the high-frequency gain of the sub input.
2. **HIGH.Fc** **[21 Hz…20.1 kHz]**
   Sets the cutoff frequency at which the shelving-type EQ will adjust the high-frequency range of the sub input.
3. **LOW.G** **[–15 dB…+15 dB]**
   Sets the low-frequency gain of the sub input.
4. **LOW.Fc** **[21 Hz…20.1 kHz]**
   Sets the cutoff frequency at which the shelving-type EQ will adjust the low-frequency range of the sub input.
5. **PAN** **[L63…C…R63]**
   Sets the panning at which the sub input will be sent to the master bus.
6. **ON** **[ON, OFF]**
   Specifies whether the sub input will be sent to the master bus (ON) or not (OFF).
7. **Level** **[0…100]**
   Specifies the level at which the sub input is sent to the master bus.
8. **Level meter**
   Indicates the level of the master bus.
9. **▼ / ▲ buttons**
   Use these up/down buttons to edit the parameter values.

3a-3. Sub Mixer 9–16

This screen is available only if the optional 8-channel analog input board (AIB-8) is installed.
For details on the parameters and values, refer to "3a-2. Sub Mixer 1–8."
If the optional board is not installed, the message shown below will appear.

In the case of a 96 kHz/24-bit song, EQ is not available for sub mixer 13–16.

3a-4. Sub Mixer 17–24

This screen is available only if the optional ADAT I/O board (DIB-8) is installed.
For details on the parameters and values, refer to "3a-2. Sub Mixer 1–8."
If the optional board is not installed, the message shown below will appear.

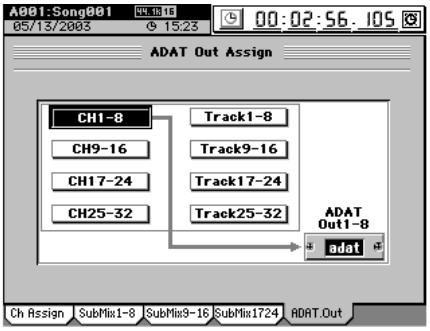
3a-5. ADAT Out Assign

This screen is available only if the optional ADAT I/O board (DIB-8) is installed. Here you can specify the output sources for ADAT OUT.

D32XD

CH1–8/CH9–16/CH17–24/CH25–32
Output the post-fader signal of CH1–8/CH9–16/CH17–24/CH25–32.

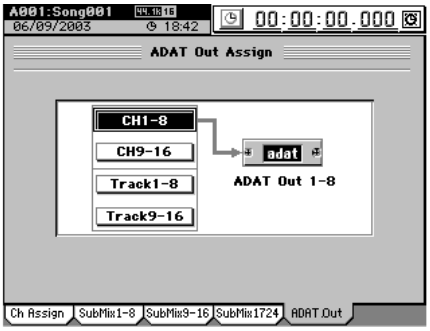
Track1–8/Track9–16/Track17–24/Track25–32
Output the playback of tracks 1–8/tracks 9–16/tracks 17–24/tracks 25–32 directly, without passing the signal through the mixer.



D16XD

CH1–8/CH9–16
Output the post-fader signal of CH1–8/CH9–16.

Track1–8/Track9–16
Output the playback of tracks 1–8/tracks 9–16 directly, without passing the signal through the mixer.



3b. PAIR/GROUP [*PAIR]

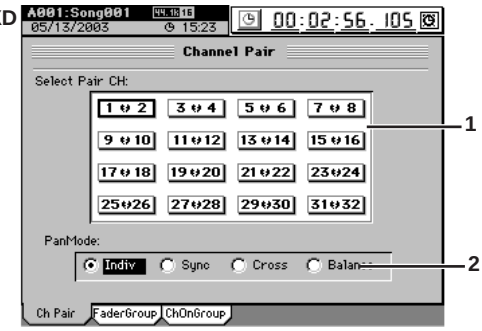
3b-1. Channel Pair

Here you can specify pairing for adjacent mixer channels. For paired channels, the following parameters will operate in tandem and will have the same values for each channel.

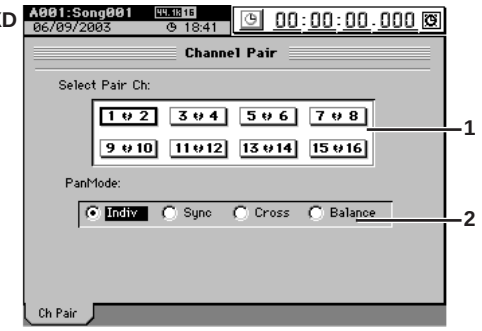
Fader, Pan, CH ON, PlayEQ, RecEQ, RecSend, Eff 1/2 Send, AUX 1/2/3/4 Send [*AUX 1/2 Send], ATT, REC/PLAY, Group (only D32XD)

Channels that are paired will be controlled by the knobs and faders of the odd-numbered channels. Operating the knobs or fader of the even-numbered channel will have no effect.

D32XD



D16XD



1. Select Pair Ch D32XD **[1↔2…31↔32]** D16XD **[1↔2…15↔16]**

Press the **1↔2–31↔32** [*15↔16] buttons to select the channels that are paired (the heart icon ♥ will be displayed for paired channels).

2. PanMode [Indiv, Sync, Cross, Balance]

Select how panning will occur.

Indiv: The pan of the two channels will operate independently.

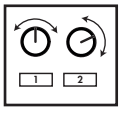
Sync: The pan of both channels will be the same value.

Cross: The two channels will have the opposite pan value.

Balance: The pan control will function as channel balance.

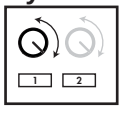
Operation when tracks 1 and 2 are paired

Indiv



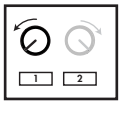
Pan 1 and 2 can be set independently.

Sync



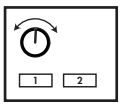
Sync If pan 1 is R63, pan 2 will also be R63.

Cross



Cross If pan 1 is L63, pan 2 will be R63.

Balance

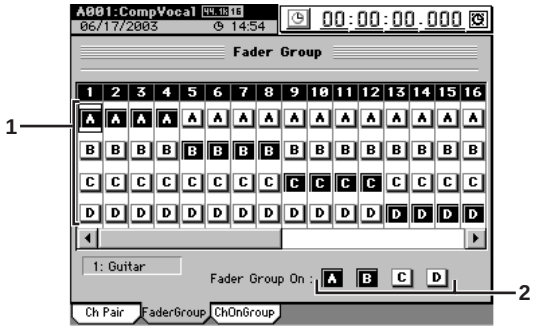


Balance Pan knob 1 operates as the Balance knob.
Pan knob 2 has no effect.

D32XD

3b-2. Fader Group

When you operate the fader of any channel that is assigned to a group, the other faders assigned to that group will also move, preserving the balance of the linked channels.
There are four groups, A through D. Each channel can beassigned to only one of these Fader groups.

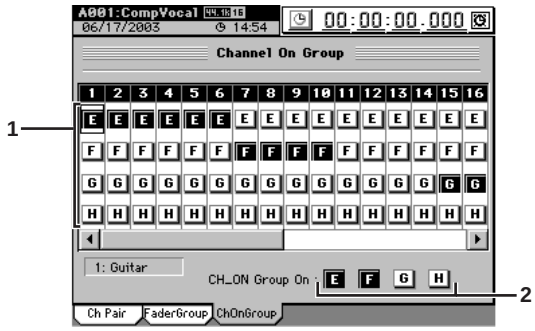


1. **Group buttons** **[A, B, C, D]**
   These buttons select the fader group for each channel. To select the group, press the corresponding button (it will be highlighted).
   Use the scroll bar/button to move the range of channels that is displayed.
2. **Group on buttons** **[A, B, C, D]**
   To enable fader grouping, press the corresponding button (highlighted). If these buttons are pressed, the faders will move to preserve the balance of the group when you operate any fader in that group.

   note *When you turn on a 1. "Group button" to add a channel to an existing group, the level of the channel at that moment will be set as that fader's balance in the group.*

3b-3. Channel On Group

When you turn on the **CH ON** key of a channel that has been assigned to a Channel On group, other channels assigned to that group will also be turned on. There are four Channel On groups; E through H. Each channel can belong to no more than one of these Channel On groups.



1. **Group buttons** **[E, F, G, H]**
   These buttons select the CH ON group for each channel. To select the group, press the corresponding button (it will be highlighted).
   Use the scroll bar/button to move the range of channels that is displayed.
2. **Group on buttons** **[E, F, G, H]**
   To enable CH ON grouping, press the corresponding button (highlighted). If these buttons are pressed, the faders will move to preserve the balance of the group when you operate any fader in that group.

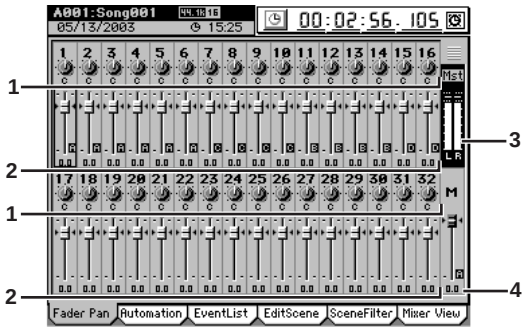
   note *When you turn on a 1. "Group button" to add a channel to an existing group, the on/off status of the channel at that moment will determine the on/off status for the group.*

3c. FADER/PAN/AUTOMATION

D32XD

3c-1. Fader Pan

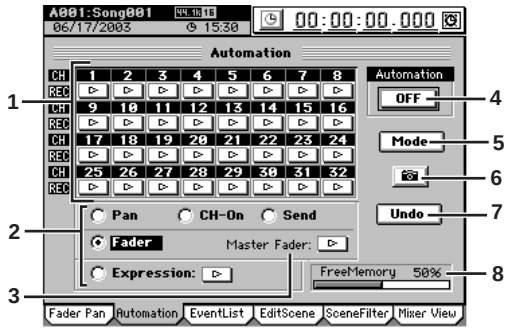
Since the D32XD has moving faders, the actual fader positions will match the position of the fader icons in this tab page. If you select a fader in the screen and use the **value dial** or the **+/–** keys to modify the value, the actual fader will move correspondingly.



1. **Pan** **[L63...C...R63]**
   This indicates the pan position. The value is displayed below the icon.
2. **Level** **[–∞…+6]**
   This shows the setting of the currently selected channel fader. The numerical value is shown below the icon.
3. **Level meter**
   This indicates the master L/R output level.
4. **Master level** **[–∞...+0]**
   This indicates the **MASTER** fader setting. The value and fader group are displayed below the icon.

3c-2. Automation

You can turn automation on and record the realtime changes you make to the mixer settings while the song plays or records.
The recorded automation can then automatically change the mixer settings during playback or recording.



1. Record channel buttons [○, ▷]
Use these buttons to select the channels for which you want to record automation. Events will be recorded for each channel whose button you press to make it indicate "○".

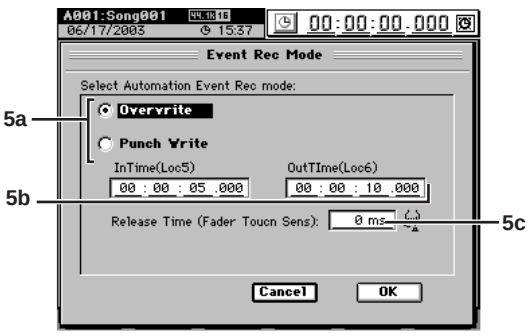
2. Record parameter buttons
[Fader, Pan, CH ON, Send, Expression]
Use these buttons to select the parameter for which you want to record automation. You can select only one parameter at a time; press a radio button to highlight the desired parameter.

If you select Expression, you will be unable to select the record channel. Press the button located beside this field to make it indicate "○" before you record.

3. Master Fader [○, ▷]
If you selected "Fader" as the record parameter, and you want to record the operations of the MASTER fader as well, press this button to make it indicate "○".

4. Automation
This button turns automation playback/recording on/off.
ON: Automation playback/recording will occur. When song playback/recording arrives at a location where events have been recorded, those settings will be recalled, and the mixer settings will change automatically. The faders will move automatically at this time. The **Automation** indicator will light while this setting is turned on.
OFF: Automation playback/recording will not occur.

5. Mode
When you press this button, the **Event Rec Mode** dialog box will appear, allowing you to select the automation recording method. Press the **OK** button to apply your selection, or press the **Cancel** button to cancel it.



5a. Recording mode
Overwrite: Automation data will be overwritten from the point you begin playing/recording the song until the point where you stop. If you do not record events, all the previously-recorded events will be erased.
Punch Write: Parameters you adjust between the In Time (the location where you begin recording events) and Out Time (the location where you stop) will be recorded. Previously-recorded events will remain unchanged in the areas where you do not record parameter operations.
If you select Fader as the parameter to be recorded, fader data will be overwritten only while you are operating the faders (i.e., from when you touch a fader knob until you release it), regardless of the In Time and Out Time.

5b. In Time, Out Time
If the recording mode is **"Punch Write"** and you selected a parameter other than Fader as the parameter to be recorded, these settings specify the locations at which event recording will begin and end.
Use the LOC5 key to register the **In Time** (the location at which event recording will begin), and the LOC6 key to register the **Out Time** (the location at which event recording will end). (→p.38)

5c. Release Time **[0 ms...5 s]**
When the recording method is **"Punch Write,"** this specifies the time from when you take your finger off the fader until the level returns to the level of the already-recorded events.

6. SnapShot
You can press this button to store the values of all automatable parameters as a single event.

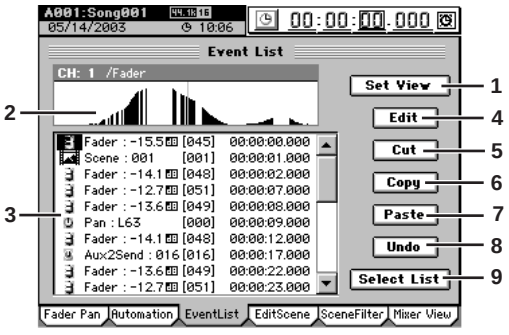
7. Undo
Press this if you want to revert the recorded automation to its prior state. You will return to the state immediately before events were recorded.

note *You can use "3c-3. Event List" to make detailed changes to the recorded events.*

8. Free event memory amount
This indicates the amount of remaining memory in which you can record events.

3c-3. Event List

Here you can view or edit the events and scenes that you recorded using automation.



1. Set View
Press this button to open the **Set View** dialog box. Press the **OK** button to apply your selections, or press the **Cancel** button to cancel them.

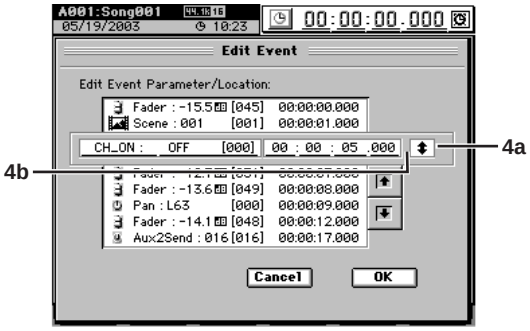
1a. Event View Source
Press a radio button to choose the parameter that will appear in the event view.

1b. Time Resolution/dot [0.1 ms...1 s]
Specify the range that will appear in the event view. The range shown will be the time you specify here × 192.

2. **Event view**
This area shows the events of the source you selected in Set View.

3. **Event list**
Displays the events selected in the "9. Select List." To edit an event, select (highlight) it by pressing it in the list.

4. **Edit**
Press this button to open the **Edit Event** dialog box.



4a. Event select button
Use this to select the event you want to edit. Press this button and use the **value dial** (or **+/–** keys) to make your choice.

4b. Parameter/Parameter value [MIDI value]/Location
Select (highlight) the parameter or location that you want to edit, and use the **value dial** (or **+/–** keys) to edit it.
The only way to edit a scene is to change its location. The values will not be updated until you press the **OK** button to confirm your edits.

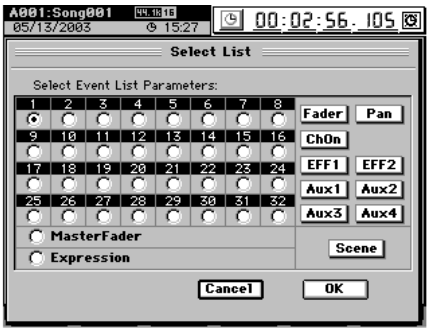
5. **Cut**
Press this button to open the **Cut Event** dialog box.
The selected event will be cut (deleted) from the event list. However, the event itself will be temporarily saved in the edit buffer (clipboard).
To execute the cut, press the **Yes** button. To cancel, press the **No** button.
To cut all events in the event list, press (highlight) the **Select All** button and then execute Cut.

6. **Copy**
Press this button to open the **Copy Event** dialog box.
The selected event will be copied temporarily to the edit buffer (clipboard).
To execute the copy, press the **Yes** button. To cancel, press the **No** button.
To copy all events in the event list, press (highlight) the **Select All** button and then execute Copy.

7. **Paste**
Press this button to open the **Paste Event** dialog box. The event temporarily saved in the edit buffer (clipboard) will be pasted following the selected event.
To execute the paste, press the **Yes** button. To cancel, press the **No** button.

8. **Undo**
Press this button to return to the state prior to executing Cut, Copy, or Paste. This can be used only to return to the immediately previous state.

9. **Select List**
Press this button to open the **Select List** dialog box. Here you can select the channel and parameter that will be displayed in the event list. You can select only one channel and one parameter; however you may select **"Scene"** at the same time. If you select **"Master Fader,"** you will not be able to select the channel.



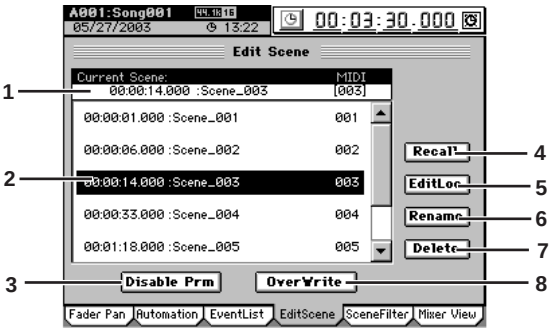
3c-4. Edit Scene

The mixer settings you adjust can be stored as a "scene" at a desired location, and automatically recalled during playback to change the mixer settings (when the "3c-2. Automation" setting **"Automation"** is on). You can also recall a scene when desired as a set of general-purpose settings (→p.52). You can store one hundred scenes for each song.
A scene may contain the following settings.

Channel parameters
CH ON, PlayEQ, ATT, sends, insert effect assignments, fader, pan

Effects
Effect program numbers and Trim of the insert, master, and final effects.

Effect return, MASTER fader, AUX levels, master EQ



1. **Scene select cell**
This area displays the currently selected scene (current scene).

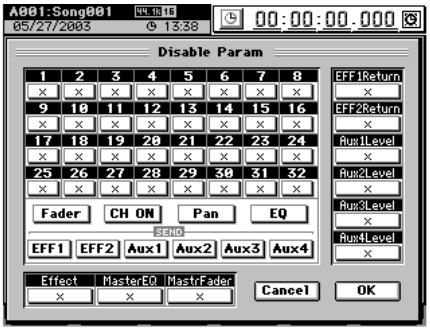
note *If no scene is selected, the **Default Scene** will be selected.*

Choose a song in the scene list and press the **Recall** button to select it.
From the left, this shows the edit icon, location, scene name, and MIDI program number.
The edit icon will appear if the scene has been edited until you press the **OverWrite** button.
If you turn off the power before pressing the **OverWrite** button, the edits you made will be lost, and the scene will revert to the state prior to editing.

2. **Scene list**
   This area displays the scenes that have been stored.
   From the left, the location, scene name, overlap warning icon "☠", and MIDI program number will be displayed for each scene. It is possible for there to be more than one scene at the same location, but an overlap warning icon reminds you to use caution when recalling these scenes.

   note *If **Automation** is on, scenes that have this overlap warning icon will not play back.*

3. **Disable Prm**
   Press this button to display the **Disable Param** dialog box.



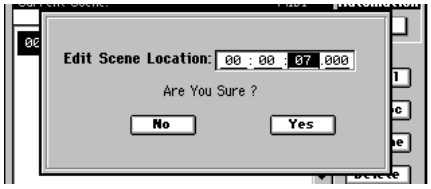
   For each scene, you can filter specific mixer settings (parameters) so that they will not be recalled when that scene is played back.
   Select the mixer parameters that will be disabled.
   For the Fader, CH ON, Pan, EQ, EFF 1/2 sends and Aux 1/2/3/4 sends, you must also select which channels will have these parameters disabled.
   The EFF1/2 Return, Effect, Aux 1/2/3/4 Level, MasterEQ, and MasterFader parameters can be disabled without regard to the channel.
   If a parameter button is on (highlighted), filtering will apply to that parameter for the selected channels, so that those settings of the scene will be ignored.
   If a button is off (i.e., filtering off), those settings of the scene will be applied.
   Filtering is applied to the selected scene as a "playback filter."

   note *Fader, CH ON, Pan, EQ, EFF1/2, and AUX1/2/3/4 filter settings apply only to channels that are disabled (highlighted).*

   note *If you want to enable/disable scene parameters for all the scenes in a song, use the **"SceneFilter"** tab page.*

4. **Recall**
   Recalls the settings that are registered in a scene. If you recall and edit a scene, press the **OverWrite** button to save your edits. Otherwise, the scene will revert to the state prior to editing when you exit this screen.

5. **Edit Loc**
   Here you can change the location where the scene is stored.
   In the scene list, select the scene whose location you want to edit.
   Press the **EditLoc** button to display the **Edit Scene Location** dialog box, and edit the location at which the scene is stored.
   When you press the unit (hour, minute, second, etc.) that you want to edit, it will be enclosed by a frame, and you can use the value dial or the **+/–** keys to edit the value.
   Press the **Yes** button to apply your changes, or press the **No** button to discard your changes.



6. **Rename**
   Here you can rename the scene.
   In the scene list, select the current scene whose name you want to edit, and press the **Rename** button to display the **Rename** dialog box. You can assign a name of up to sixteen characters. (→p.97)

7. **Delete**
   In the scene list, select the scene that you want to delete, and press the **Delete** button to display the **Delete Scene** dialog box.
   By turning the **Select All** button on (highlighted) in the dialog box, you can delete all scenes in a single operation.
   Press the **Yes** button to delete the scene(s), or press the **No** button to cancel the operation.

   Undo is not available for this Delete operation.

8. **OverWrite**
   Overwrites the current mixer settings onto the selected scene number. Use this when you want to make fine adjustments to the scene or replace it with a different scene.

note *Even when scenes are disabled, selecting a song will recall the mixer settings, meaning that the mixer may be operating with settings that do not match the actual key and knob positions. The mixer settings that are recalled will be the values that were current at the time the song was saved (→p.137).*

3c-5. Scene Filter

These settings specify the parameters that will be modified when scenes are recalled. The enable/disable settings you make here will apply to all scenes of the song.

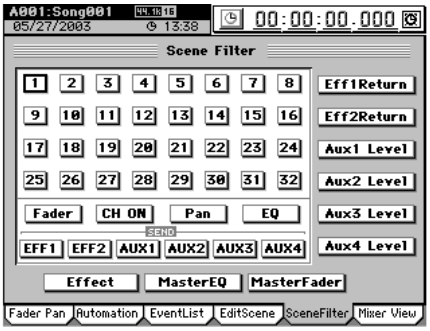
note *If you want to enable/disable parameters for a specific scene of the song, make settings in the **"EditScene"** tab page **3.Disable Prm**.*

Press the buttons to enable/disable the corresponding channels and/or parameters. A channel/parameter whose button is turned on will not be affected by scene recall operations. EFF 1/2 Return, Effect, Aux 1/2/3/4 Level, MasterEQ, and MasterFader parameters can be disabled independently of the channel.

note *Fader, CH ON, Pan, EQ, EFF 1/2, and AUX 1/2/3/4 filter settings are valid only for channels that are disabled (highlighted).*

*The **Effect** button enables/disables and **Trim** the effect program number and insert effect assignments.*

*The **EFF 1/2 Return** button enables/disables the **Return Level** and **Balance** settings of the master effect 1/2.*

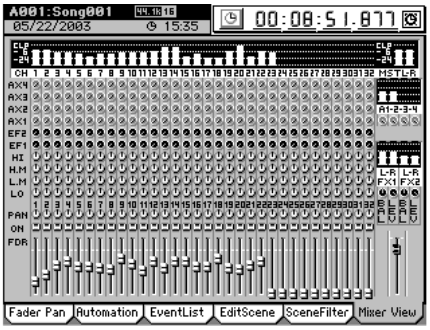


3c-6. Mixer View

You can use the Mixer View screen to check the settings of a scene.
Here you can view and edit the following parameters.

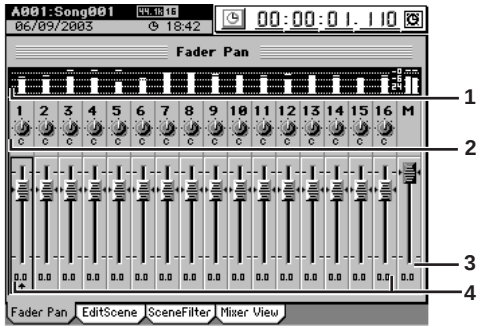
Faders, CH ON, pan, EQ LOW Gain/EQ MID Gain/ HIGH_MID Gain/HIGH Gain, EFF1/2 Send, AUX 1/2/3/ 4 Send, AUX 1/2/3/4 LEVEL, EFF 1/2 Return Level, EFF 1/2 Return Balance

If you move the faders and pan knobs on the top panel, the screen will be updated to change the value accordingly, and the selection will move to that parameter. If you operate the EQ and send knobs, the changes will show when you return to the **"Mixer View"** tab page.



D16XD

3c-1. Fader Pan



1. **Post Fader level meters**
   These indicate the post-fader levels. The **MASTER** fader is shown as L/R.
2. **Pan** **[L63…C…R63]**
   Displays the pan setting. The value is displayed below the icon.
3. **Master level** **[–∞…+0]**
   This indicates the **MASTER** fader setting. The numerical value is shown below the icon.
4. **Level** **[–∞…+6]**
   This shows the setting of the currently selected channel fader. The numerical value is shown below the icon.

Pan/fader guide

If the pan or fader value of the currently selected channel differs from the position of the pan knob or fader, a guide icon is displayed.
Recording and playback will occur according to the settings shown in the screen; however if you want the knob or fader position to match the internal setting, adjust the knob or fader while watching the icon.

Fader

Icon	Difference from current value	Relationship between position and value
↓	Large	Lower the fader position (the fader is higher than the value)
↓	Medium	
▼	Small	
(none)	None	The position and value match
▲	Small	Raise the fader position (the fader is lower than the value)
↑	Medium	
↑	Large	

Pan

Icon	Difference from current value	Relationship between position and value
→	Large	Turn the pan knob toward the right (the knob is to the left of the value)
→	Medium	
▶	Small	
(none)	None	The position and value match
◀	Small	Turn the pan knob toward the left (the knob is to the right of the value)
←	Medium	
←	Large	

3c-2. Edit Scene

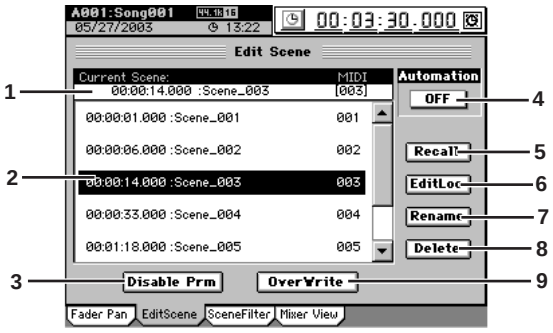
The mixer settings you adjust can be stored as a "scene" at a desired location, and automatically recalled during playback to change the mixer settings (when **"Automation"** is on). You can also recall a scene when desired as a set of general-purpose settings (→p.52). You can store one hundred scenes for each song.

A scene may contain the following settings.

Channel parameters
CH ON, PlayEQ, ATT, sends, insert effect assignments, fader, pan

Effects
Effect program numbers and Trim of the insert, master, and final effects.

Effect return, MASTER fader, AUX levels, master EQ



1. **Scene select cell**
   This area displays the currently selected scene (current scene).

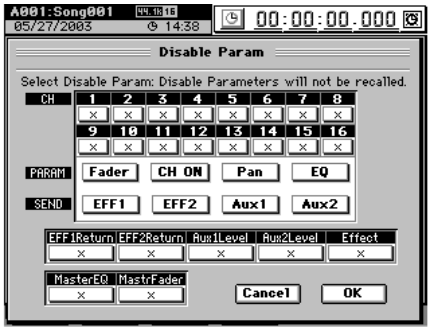
   note *If no scene is selected, the **Default Scene** will be selected.*

   Choose a song in the scene list and press the **Recall** button to select it.
   From the left, this shows the edit icon, location, scene name, and MIDI program number.
   The edit icon will appear if the scene has been edited until you press the **OverWrite** button.
   If you turn off the power before pressing the **OverWrite** button, the edits you made will be lost, and the scene will revert to the state prior to editing.

2. **Scene list**
   This area displays the scenes that have been stored.
   From the left, the location, scene name, overlap warning icon "", and MIDI program number will be displayed for each scene. It is possible for there to be more than one scene at the same location, but an overlap warning icon reminds you to use caution when recalling these scenes.

   note *If **Automation** is on, scenes that have this overlap warning icon will not play back.*

3. **Disable Prm**
   Press this button to display the **Disable Param** dialog box.



   For each scene, you can filter specific mixer settings (parameters) so that they will not be recalled when that scene is played back.

   Select the mixer parameters that will be disabled.
   For the Fader, CH ON, Pan, EQ, EFF 1/2 sends and Aux 1/2 sends, you must also select which channels will have these parameters disabled.
   The EFF1/2 Return, Effect, Aux 1/2 Level, MasterEQ, and MasterFader parameters can be disabled without regard to the channel.
   If a parameter button is on (highlighted), filtering will apply to that parameter for the selected channels, so that those settings of the scene will be ignored.
   If a button is off (i.e., filtering off), those settings of the scene will be applied.
   Filtering is applied to the selected scene as a "playback filter."

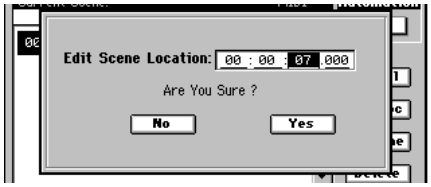
   note *Fader, CH ON, Pan, EQ, EFF1/2, and AUX1/2 filter settings apply only to channels that are disabled (highlighted).*

   note *If you want to enable/disable scene parameters for all the scenes in a song, use the **"SceneFilter"** tab page.*

4. **Automation**
   Turns scene playback on/off.
   ON: Scenes will play back. When song playback reaches the location at which a scene is registered, that scene will be recalled, and the mixer settings will automatically change. If this is on, the **Automation** indicator will light.
   OFF: Scenes will not play back. In this case, you will be able to freely recall scenes as general-purpose settings regardless of their location (→p.52 "4-2. Recalling a scene").

5. **Recall**
   Recalls the settings that are registered in a scene. If you recall and edit a scene, press the **OverWrite** button to save your edits. Otherwise, the scene will revert to the state prior to editing when you exit this screen.

6. **Edit Loc**
   Here you can change the location where the scene is stored.
   In the scene list, select the scene whose location you want to edit.
   Press the **EditLoc** button to display the **Edit Scene Location** dialog box, and edit the location at which the scene is stored.
   When you press the unit (hour, minute, second, etc.) that you want to edit, it will be enclosed by a frame, and you can use the value dial or the **+/–** keys to edit the value.
   Press the **Yes** button to apply your changes, or press the **No** button to discard your changes.



7. **Rename**
   Here you can rename the scene.
   In the scene list, select the scene whose name you want to edit, and press the **Rename** button to display the **Rename** dialog box. You can assign a name of up to sixteen characters. (→p.97)

8. **Delete**
   In the scene list, select the scene that you want to delete, and press the **Delete** button to display the **Delete Scene** dialog box.
   By turning the **Select All** button on (highlighted) in the dialog box, you can delete all scenes in a single operation.
   Press the **Yes** button to delete the scene(s), or press the **No** button to cancel the operation.

   Undo is not available for this Delete operation.

9. **OverWrite**
   Overwrites the current mixer settings onto the selected scene number. Use this when you want to make fine adjustments to the scene or replace it with a different scene.

note *Even when scenes are disabled, selecting a song will recall the mixer settings, meaning that the mixer may be operating with settings that do not match the actual fader and knob positions. The mixer settings that are recalled will be the values that were current at the time the song was saved (→p.137).*

3c-3. Scene Filter

These settings specify the parameters that will be modified when scenes are recalled. The enable/disable settings you make here will apply to all scenes of the song.

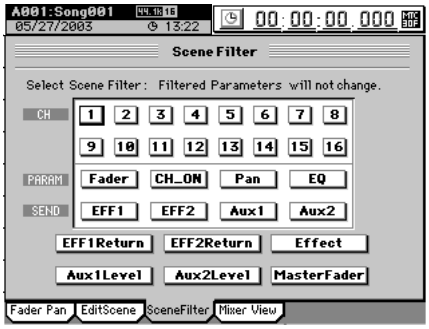
note *If you want to enable/disable parameters for a specific scene of the song, make settings in the **"EditScene"** tab page **3.Disable Prm**.*

Press the buttons to enable/disable the corresponding channels and/or parameters. A channel/parameter whose button is turned on will not be affected by scene recall operations. EFF 1/2 Return, Effect, Aux 1/2 Level, MasterEQ, and MasterFader parameters can be disabled independently of the channel.

note *Fader, CH ON, Pan, EQ, EFF 1/2, and AUX 1/2 filter settings are valid only for channels that are disabled (highlighted).*

*The **Effect** button enables/disables and **Trim** the effect program number and insert effect assignments.*

*The **EFF 1/2 Return** button enables/disables the **Return Level** and **Balance** settings of the master effect 1/2.*

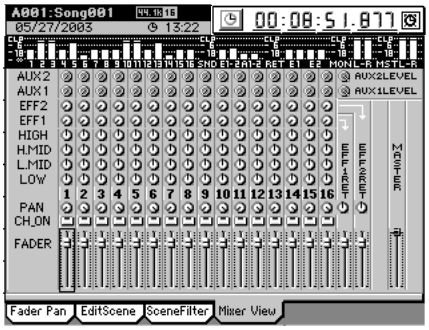


3c-4. Mixer View

You can use the Mixer View screen to check the settings of a scene.
Here you can view and edit the following parameters.

Faders, CH ON, pan, EQ LOW Gain/EQ MID Gain/ HIGH_MID Gain/HIGH Gain, EFF1/2 Send, AUX 1/2 Send, AUX 1/2 LEVEL, EFF 1/2 Return Level, EFF 1/2 Return Balance

If you move the faders and pan knobs on the top panel, the screen will be updated to change the value accordingly, and the selection will move to that parameter. If you operate the EQ and send knobs, the changes will show when you return to the **"Mixer View"** tab page.



3d. EQ/PHASE/REC [*EQ/ATT/PHASE]

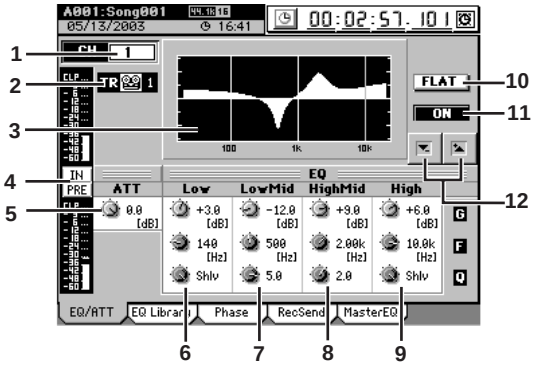
Here you can adjust the equalizer, attenuator, EQ library, and phase settings for each channel, and adjust the master EQ settings.

3d-1. EQ/ATT

Use the **CH SELECT** keys to select a channel and view its settings. For each channel you can edit the settings of the four-band equalizer and the attenuator. The equalizer is normally a peaking type, however the LOW EQ and HIGH EQ bands can be set to a shelving (Shlv) type.

You can use the switches located to the right of the display to select the four equalizer bands. The Gain/Freq/Q knobs located to the right of the display can be used to adjust the equalizer G/F/Q parameters.

Equalizer settings used here can be loaded from the EQ library, or registered in the EQ library (see the section below, "3d-2. EQ Library").



1. CH D32XD **[1…32]** D16XD **[1…16]**

Use the **CH SELECT** keys (or this edit cell) to select the channel whose equalizer settings you want to edit. This channel is linked with **"CH"** in the **"EQ Library"** tab page.

note *If the selected channel's PLAY/REC status is PLAY, the screen will show the PlayEQ. If REC, it will show the RecEQ.*

2. IN/TR indicator
This indicates either IN or TR to show whether the current EQ is the PlayEQ or the RecEQ, and also shows the current input source.

3. EQ curve graph
The EQ curve produced by the settings is shown here as a graph.

4. Level meter button
Each time you press the button, the position of the displayed level meter will change.
IN: Input level. The level input to the EQ is displayed.
PRE: Pre-fader level. The output level of the EQ is displayed.
PST: Post-fader level. The level after passing through the fader is displayed.

5. ATT **[–63.5 dB…0 dB]**
Here you can adjust the attenuator. Lowering this value will lower the level that is input to the EQ.

6. **LOW G/F/Q**
[–15 dB…+15 dB/21 Hz…20 kHz/0.1…10, Shlv]
Here you can adjust the gain, center frequency, and Q (filter sharpness) of the low-frequency region.
If you select Shlv as the Q value, this will become a shelving-type EQ; in this case the F value will be the cutoff frequency.

7. **LOW-MID G/F/Q**
[–15 dB…+15 dB/21 Hz…20 kHz/0.1…10]
Here you can adjust the gain, center frequency, and Q (filter sharpness) of the low-mid frequency region.

8. **HIGH-MID G/F/Q**
[–15 dB…+15 dB/21 Hz…20 kHz/0.1…10]
Here you can adjust the gain, center frequency, and Q (filter sharpness) of the high-mid frequency region.

9. **HIGH G/F/Q**
[–15 dB…+15 dB/21 Hz…20 kHz/0.1…10, Shlv]
Here you can adjust the gain, center frequency, and Q (filter sharpness) of the high-frequency region.
If you select Shlv as the Q value, this will become a shelving-type EQ; in this case the F value will be the cutoff frequency.

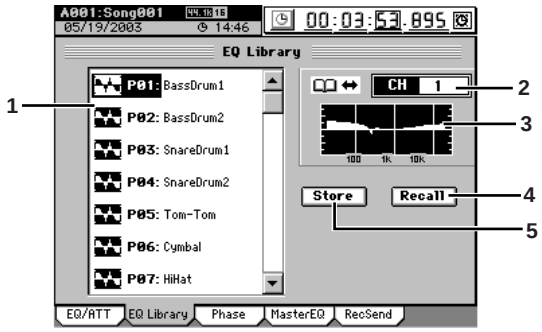
10. **FLAT**
Sets the Gain of each equalizer band to 0 dB. The EQ settings for that channel will be initialized.

11. **ON/OFF**
Switches the equalizer on/off. This allows you to listen to the signal with and without EQ quickly to check your settings.

12. **▼ / ▲ buttons**
Use these up/down buttons to edit the parameter values.

3d-2. EQ Library

Here you can load EQ settings from an EQ library. You can also store EQ settings in a user EQ library.
There are 50 preset EQ libraries, and 50 user EQ libraries.
An EQ library stores parameters 6–9 of the preceding section "3d-1. EQ."



1. **EQ library list**
Press the screen to select an EQ library. The list shows the library number (P** are presets, U** are user) and library name.

2. **CH** **[1…16]**
Press a **CH SELECT** (or the edit cell) to select the channel into which you will load an EQ library or whose EQ settings you will store in an EQ library.
This channel is linked with **"CH"** of the **"EQ/ATT"** tab page.

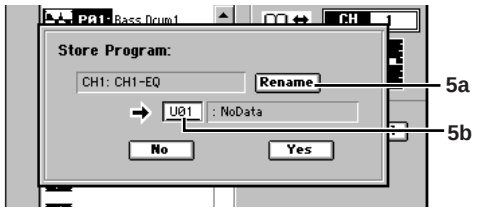
3. **EQ curve graph**
The EQ curve of the selected library is shown as a graph.

4. **Recall**
Loads the selected library into the channel you selected in **2. "CH."**
Use the library list to select the library that you want to load.
Press the button to display the **Recall** dialog box, verify the library and the loading-destination channel, and press the **Yes** button. If you decide not to load, press the **No** button.

5. **Store**
This stores the EQ settings of the **"EQ/ATT"** tab page into one of the user EQ libraries.
The EQ settings of the channel selected by **2."CH"** will be stored.
A name will automatically be assigned to the stored library.

i.e. The PlayEQ of channel 8: CH08-I.EQ
The RecEQ of channel 10: CH10-EQ

Verify the store-destination number and press the **Yes** button. If you decide not to store, press the **No** button.



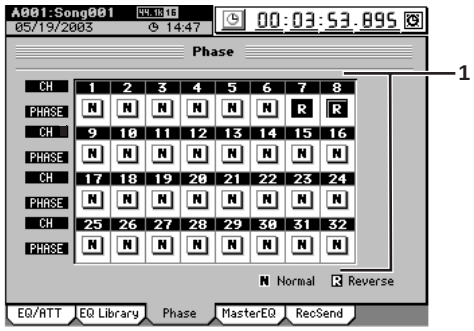
5a. Rename
You can press this button to edit the name of the library program (→p.97).

5b. Program number cell
Here you can select the store-destination program number. Press the cell to highlight it, and use the **value dial** (or the **+/–** keys) to make your selection.

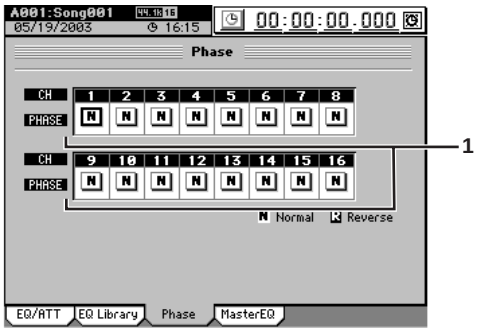
3d-3. Phase

You can invert the phase of each channel.
If an audio device is input in stereo via a jack whose hot and cold conductors are reversed, their stereo position may be blurred, or portions of the sound may be cancelled. This setting lets you invert the phase to correct such situations.

D32XD



D16XD



1. **PHASE** **[N, R]**
   N (NormalPhase): The phase of this channel will not be inverted. Normally you will leave this at "N."
   R (ReversePhase): The phase of this channel will be inverted.

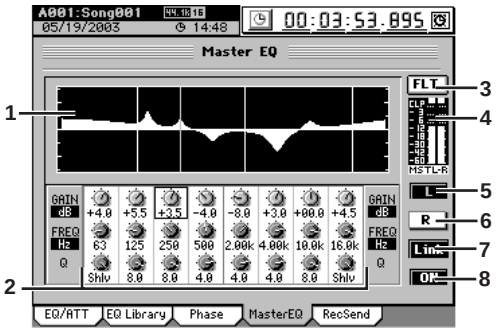
   note *On the D32XD/D16XD, pin 2 is hot and pin 3 is cold (→p.7). Set this to* ***"R"*** *if the connected audio device uses the opposite pin wiring.*

3d-4. Master EQ

Here you can adjust the equalizer settings for the master bus. This is an eight-band peaking equalizer. Bands 1 and 8 can also be set to a shelving-type (Shlv) EQ.
The master EQ is used as a Rec EQ for the master track.

The switches and Gain/Freq./Q knobs located at the right of the display cannot be used to adjust the master EQ.

The master EQ cannot be used when playing back the master track or when using ***"Solo→Master."***



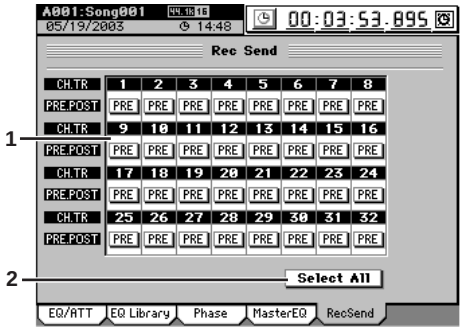
1. **EQ curve graph**
   This graphically displays the EQ curve specified by the parameters.
2. **Band 1…8 EQ G/F/Q**
   [–15 dB…+15 dB/21 Hz…20.1 kHz/0.1…10, Shlv*]
   These parameters adjust the gain, center frequency, and Q (filter sharpness) of each band.
   * By selecting Shlv as the "Q" value for bands 1 and 8, you can switch them to shelving-type EQ; in this case the F value will become the cutoff frequency.
3. **FLT** (Flat)
   This sets the Gain of each band to 0 dB.
4. **Level meter**
   This indicates the level of the master bus.

   note *If clipping occurs, adjust the* ***MASTER*** *fader.*
5. **L**
   Selects the master EQ settings for the left channel.
6. **R**
   Selects the master EQ settings for the right channel.
7. **Link**
   Sets the left and right channels of the master EQ to the identical settings. You can adjust the settings from either the left or right channel.
8. **ON/OFF**
   Switches the master EQ on/off. This turns both channels on/off regardless of the channel (L or R) you are currently editing.

D32XD

3d-5. Rec Send

Here you can set the position from which signals will be sent from each mixer channel to the recording tracks.
If you select the pre-fader setting (**PRE**), the signal will be recorded at the level immediately before the fader, regardless of how the fader is adjusted.
With the pre-fader setting, the recording level will be the same as when the post-fader (**PST**) setting is used with the fader level set to unity (0 dB).

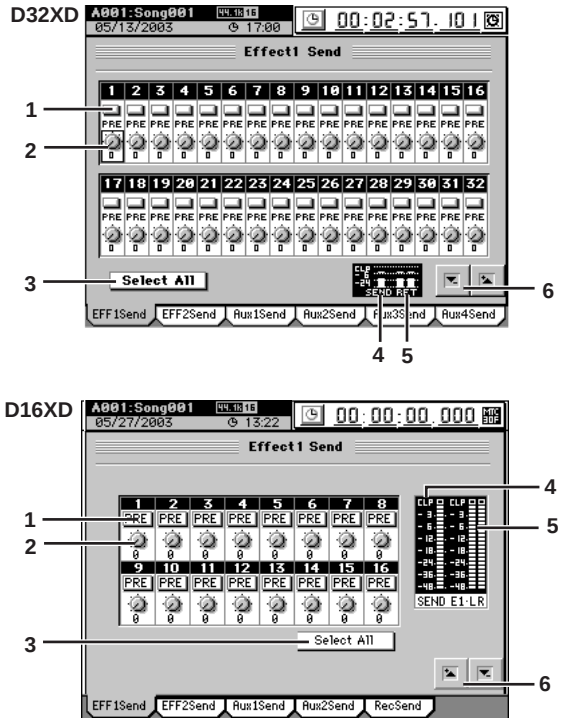


1. **PRE/PST**
   This specifies whether the signal will be recorded at the level immediately before the fader (Pre Fader) or the level immediately after the fader (Post Fader).
   PRE: Immediately before fader location
   PST: Immediately after fader location
2. **Select All**
   Links the **PRE/PST** buttons of all channels.

3e. SEND (EFF/AUX [*/REC])

3e-1. Effect 1 Send

You can adjust the send levels from each mixer channel to master effect 1.
If you select the pre-fader setting (**PRE**), the signal will be sent to the master effect from immediately before the fader, regardless of the fader level.
With the pre-fader setting, the signal is sent to the master effect at the same level as when the post-fader (**PST**) setting is used with the fader level set to unity (0 dB).



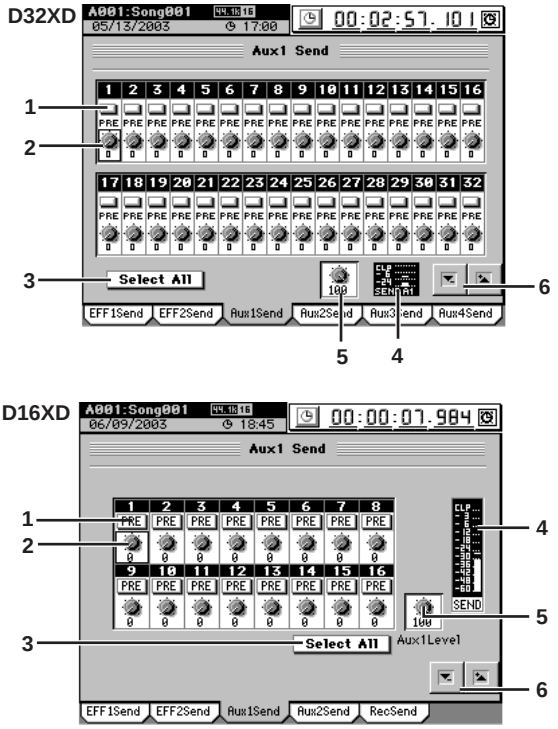
1. **PRE/PST**
   This specifies whether the signal will be sent at the level immediately before the fader (Pre Fader) or the level immediately after the fader (Post Fader).
   PRE: Send the pre-fader level
   PST: Send the post-fader level
2. **SEND**
   Adjusts the send level.
3. **Select All**
   This links the operation of all channels.
   It will link the **PRE/PST** buttons and the **SEND** knobs.
4. **SEND LEVEL meter**
   Indicates the level of the Effect 1 Send bus.
5. **Effect 1 L/R meter**
   Indicates the level of the Effect 1 Return L/R bus.
6. **▼ / ▲ buttons**
   Use these up/down buttons to edit the parameter values.

3e-2. Effect 2 Send

Here you can adjust the send levels from each mixer channel to master effect 2.
For details on the parameters, refer to the section above, "3e-1. Effect 1 Send."

3e-3. Aux1 Send

You can adjust the send levels from each mixer channel to the AUX OUT 1 jack.
If you select the pre-fader setting (**PRE**), the signal from immediately before the fader will be sent to the AUX OUT jack regardless of the fader level.
With the pre-fader setting, the signal is sent to the AUX OUT jack at the same level as when the post-fader (**PST**) setting is used with the fader level set to unity (0 dB).
For details on connecting and using external effects, refer to p.60.



1. **PRE/PST**
   This specifies whether the signal will be sent at the level immediately before the fader (Pre Fader) or the level immediately after the fader (Post Fader).
   PRE: Send the pre-fader level
   PST: Send the post-fader level
2. **SEND**
   Adjusts the send level.
3. **Select All**
   This links the operation of all channels.
   It will link the **PRE/PST** buttons and the **SEND** knobs.
4. **SEND LEVEL meter**
   Indicates the level of the AUX1 Out.
5. **AUX1 Send meter**
   Adjusts the level of the AUX1 Out.
6. **▼ / ▲ buttons**
   Use these up/down buttons to edit the parameter values.

3e-4. Aux2 Send

Here you can adjust the send level that is output from each mixer channel to the AUX 2 jack.
For details on the parameters, refer to the section above, "3e-3. Aux1 Send."

D32XD

3e-5. Aux3 Send

Here you can adjust the send level that is output from each mixer channel to the AUX 3 jack.
For details on the parameters, refer to the section above, "3e-3. Aux1 Send."

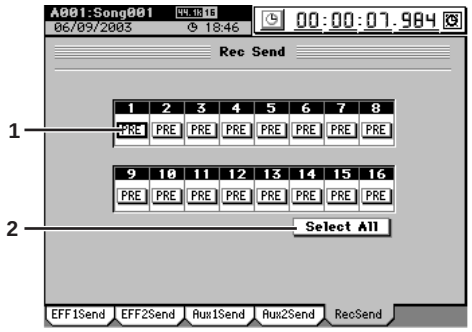
3e-6. Aux4 Send

Here you can adjust the send level that is output from each mixer channel to the AUX 4 jack.
For details on the parameters, refer to the section above, "3e-3. Aux1 Send."

D16XD

3e-5. Rec Send

Here you can set the position from which signals will be sent from each mixer channel to the recording tracks.
If you select the pre-fader setting (**PRE**), the signal will be recorded at the level immediately before the fader, regardless of how the fader is adjusted.
With the pre-fader setting, the recording level will be the same as when the post-fader (**PST**) setting is used with the fader level set to unity (0 dB).



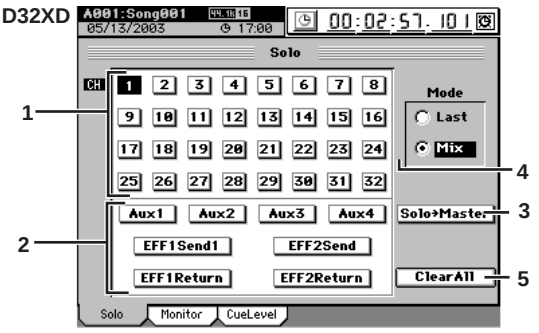
1. **PRE/PST**
   This specifies whether the signal will be recorded at the level immediately before the fader (Pre Fader) or the level immediately after the fader (Post Fader).
   PRE: Immediately before fader location
   PST: Immediately after fader location
2. **Select All**
   Links the **PRE/PST** buttons of all channels.

3f. SOLO/MONITOR

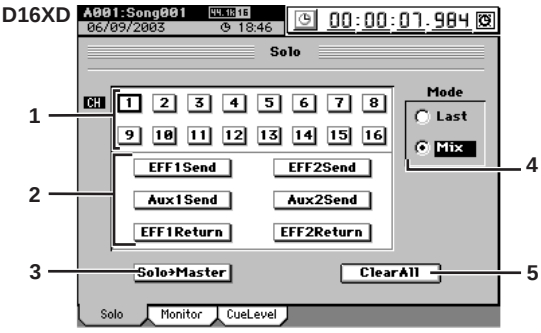
3f-1. Solo

Use this function when you want to listen to just one (or more) of the channels, or to check the audio being routed to the sends. The solo signal is output from the **MONITOR OUT L/R** jacks and the **PHONES** jacks.
You can also adjust the settings so that the solo signal is output from the **MASTER L/R** jacks.

D32XD



D16XD



1. **CH buttons** **[1…16]**
   Use these buttons to turn the Solo function on (highlighted) or off for each channel. When one of these buttons is on, the D32XD/D16XD will automatically switch to Solo mode, and the **CH ON/SOLO** key of that channel will blink.
2. **Send, Return buttons**
   Use these buttons to turn the Solo function on (highlighted) or off for each send or return.

   EFF1 Send, EFF2 Send:
   Solo the send signal to effects 1 or 2

   AUX1 Send, AUX2 Send, AUX3 Send, AUX4 Send [*AUX1 Send, AUX2 Send]:
   Solo the send signal to external output AUX OUT 1, 2, 3 or 4 [*AUX OUT 1, 2] jacks

   EFF1 Return, EFF2 Return:
   Solo the return signal from effects 1 or 2

   To adjust the volume of each signal, use the pages or knobs that adjust each signal.

   Be aware that depending on the settings, changing these selections may cause a sudden change in the monitor volume.
3. **Solo→Master**
   This specifies whether the soloed audio will be output from the **MASTER OUT L/R** jacks. Use this setting if your monitor system is connected to the **MASTER OUT L/R** jacks and you want to listen to the soloed audio through these outputs.

*The **Solo→Master** setting is active only while in the **"SOLO/MONITOR"** tab page. It will automatically be turned off when you leave this page.*

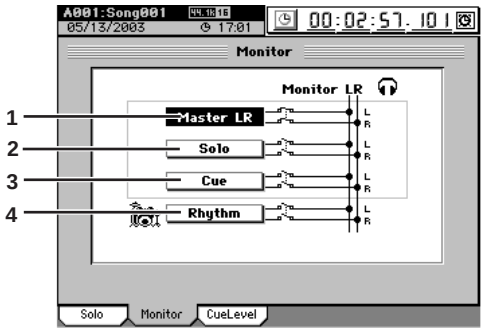
4. **Mode**
   Last: Solo only the last-selected signal (multiple selections are not possible)
   Mix: Solo all selected signals (multiple selections are possible)

   If you switch from Mix to Last, all solo settings will be turned off.

5. **ClearAll**
   Turns all solo settings off.

3f-2. Monitor

Here you can select the audio signals that will be output from the monitor output (**MONITOR OUT L/R** jacks) and headphone output (**PHONES** jack).



1. **Master LR**
   Sends the master LR bus to the monitor output. Normally you will select this.
2. **Solo**
   When you select a signal to be soloed in the **"Solo"** tab page, this will be selected automatically, and it will not be possible to select "**Master LR**" or "**Cue**." To select these items, you must first turn "Off" all soloed signals.
3. **Cue**
   Sends the signal specified by the **"Cue Level"** (see the section that follows) level and pan settings to the monitor output. If you select this when recording, you will be able to adjust the monitor volume and pan for comfortable playing, without affecting the recording level of the signal.
4. **Rhythm**
   Sends the internal rhythm sound directly to the monitor output. You can use this when you want to hear the rhythm only in the headphones while you output the track playback audio from the **MASTER OUT L/R** jacks during a live performance. Normally you will leave this turned off.

   *The rhythm will not be output unless you turn on the **Rhythm On** button in the **TEMPO**, **"SetUp"** tab page.*

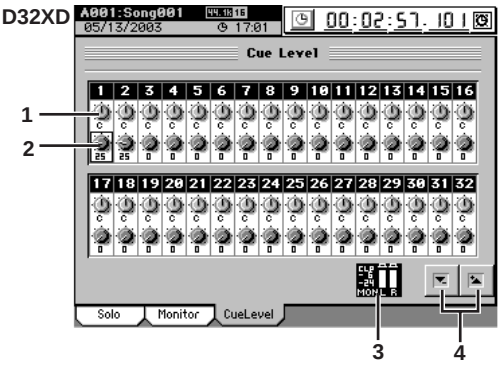
note *If you turn **Rhythm** on here, the **TEMPO**, **"SetUp"** tab page **"Assign"** setting will switch to **"Monitor."** If you turn **Rhythm** off, the **TEMPO "SetUp"** tab page **"Assign"** parameter will automatically change to **"CH Input."***

3f-3. Cue Level

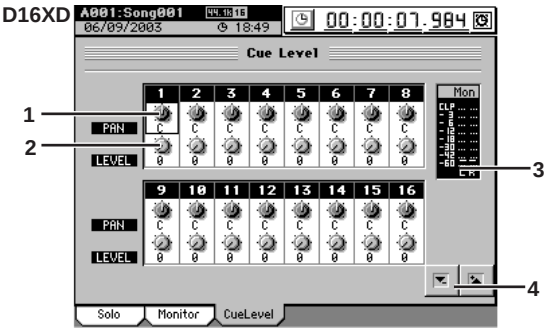
When **"Cue"** is turned on in the **"Monitor"** tab page, use the settings here to adjust the audio level and pan of each mixer channel.
During playback, the audio will be sent regardless of the channel on/off setting. During recording, audio will be sent only for channels whose **CH ON** keys are set to on.

note *The audio that is set to Cue will be the playback signal if a track is playing, or the signal being recorded if the track is recording.*

D32XD



D16XD

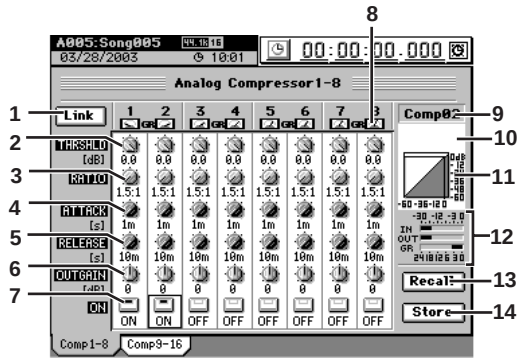


1. **Pan** **[L63…C…R63]**
   Adjusts the panning of each channel's cue signal.
2. **Level** **[0…100]**
   Adjust the level of each channel's cue signal.

   note *Unity level is 100.*
3. **Level meter**
   This bar graph indicates the cue mix output volume.
4. **▼ / ▲ buttons**
   Use these up/down buttons to edit the parameter values.

3g. ANALOG COMP

3g-1. Analog Compressor 1–8



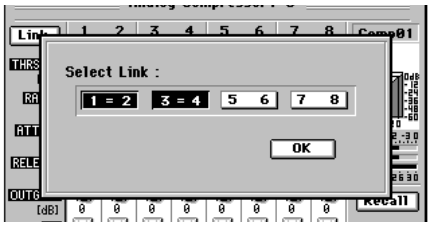
Here you can set the analog compressor parameters. These settings apply compression to the analog inputs of INPUT jacks 1 through 8.

Fifty different compressor settings are stored as preset comp programs, and there are another fifty user comp programs that you can rewrite, giving you a total of one hundred programs that you can recall by using the **Recall** button.

note *Comp channels 1–8 correspond to INPUT jacks 1–8; i.e., comp channel 1 applies to the INPUT 1 jack, and comp channel 2 applies to the INPUT 2 jack.*

Due to the characteristics of analog circuitry, the displayed parameter values are approximate.

1. **Link**
   Press this button to display the **Select Link** dialog box.



   When compressing a stereo source, you can link adjacent compression channels and parameters.
   Press the channel buttons that you want to link, and then press the **OK** button. An **"="** symbol will be displayed between comp channels that are linked.

2. **THRSHLD** (Threshold) **[0 dB…–40 dB]**
   Sets the threshold level at which the compressor begins to apply.
   The displayed value is relative to full scale.

3. **RATIO** **[1.5:1…inf:1]**
   Sets the compression ratio that will be applied to an input signal when it exceeds the threshold level.

   note *Setting this to inf (∞):1 will produce the operation of a limiter.*

4. **ATTACK** **[1 mS…200 mS]**
   Sets the speed (attack time) at which the compressor will begin to apply after the input signal exceeds the threshold level.

5. **RELEASE** **[10 mS…10 S]**
   Sets the speed (release time) at which the compressor will stop being applied after the input signal falls below the threshold level.

   Distortion may occur if the release time is too short.

6. **OUTGAIN** **[–20 dB…+20 dB]**
   Adjusts the output level of the compressor. This lets you boost a level that was attenuated by compression.

7. **ON**
   Turns the compressor on for the selected channel. When on, part of the button will be highlighted.

8. **Gain reduction (GR) meter**
   Indicates the reduction in level that is being produced by the compressor.

9. **Comp channel**
   Indicates the currently selected comp channel.

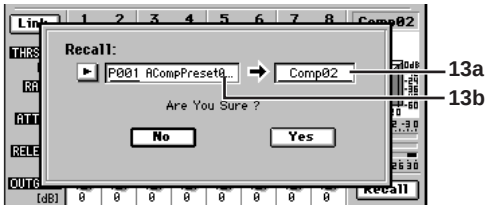
10. **Comp program**
    Indicates the number and name of the comp program used by the currently selected comp channel.

    This will not be displayed unless a program has been recalled for the comp channel.

11. **Level curve**
    Displays the level curve of the currently selected comp channel.

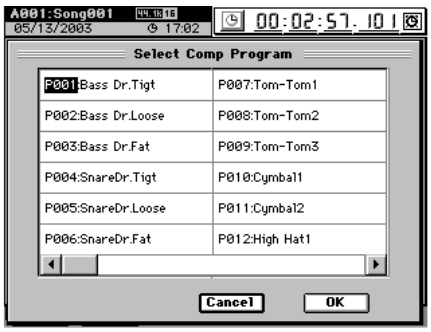
12. **IN/OUT/GR bar meters**
    These bar meters indicate the input/output levels and gain reduction level for the currently selected comp channel.

13. **Recall button**
    Changes the comp program for the selected comp channel.
    When you press this button, the **Recall** dialog box will appear. Press the **Yes** button to change the program, or press the **No** button to cancel.

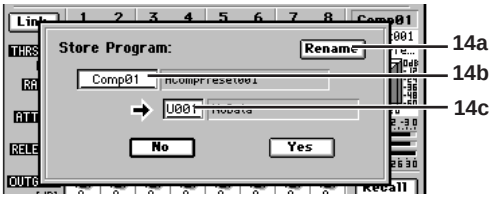


    13a. Comp channel cell
    Selects the comp channel that will use this program. Press the cell to highlight it, and use the **value dial** (or the **+/–** keys) to select a comp channel.

    13b. Program cell
    Select the program that you want to use. Press the cell to highlight it, and use the **value dial** (or the **+/–** keys) to select a comp program. Alternatively, you can press the popup button located beside the cell to display the **Select Comp Program** dialog box, and make your selection.



14. **Store button**
    Stores the current settings as a compressor program. Press this button to display the **Store Program** dialog box. Press the **Yes** button to store the program, or press the **No** button to cancel.



14a. Rename

Renames the comp program.

Press the button to display the **Rename** dialog box, and edit the name. You can assign a name of up to eight characters.

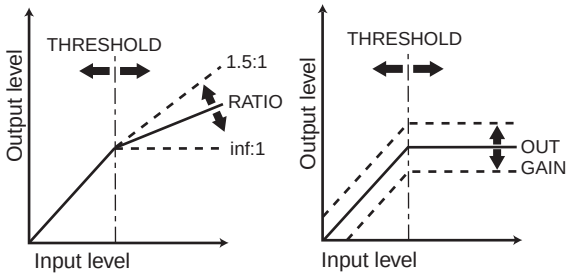
14b. Comp channel cell

Selects the comp channel whose program you want to save. Press the cell to highlight it, and use the **value dial** (or the **+/–** keys) to select the comp channel.

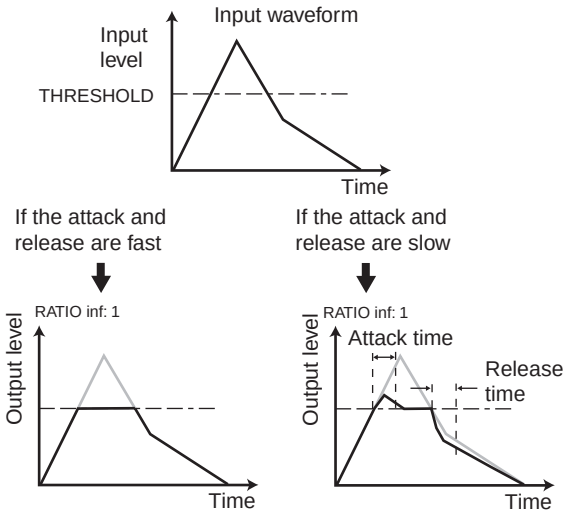
14c. Program number cell [U01…U50]

Selects the save-destination program number. Press the cell to highlight it, and use the **value dial** (or the **+/–** keys) to select the program number. The existing program at that number will be overwritten.

How THRESHOLD, RATIO, and OUT GAIN affect the input



How ATTACK and RELEASE operate



3g-2. Analog Compressor 9–16

This tab page is available if an optional 8-channel analog compressor board (ACB-8) is installed on the optional 8-channel analog input board (AIB-8).

This lets you apply compression to the analog inputs from INPUT jacks 9 through 16.

note *Comp channels 9–16 correspond to INPUT jacks 9–16; i.e., comp channel 9 applies to the INPUT 9 jack, and comp channel 10 applies to the INPUT 10 jack.*

For details on the parameters and values, refer to "3g-1. Analog Compressor 1–8."

If the above options are not installed, this tab page cannot be selected.

4. EFFECT

D32XD

4-1. Routing A

This lists the effect programs used by the insert 1–8, master, and final effects, and shows their status.

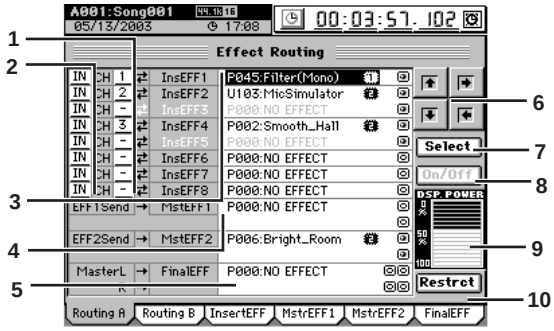
The D32XD lets you simultaneously use up to 24 insert effects, two master effects, and one final effect.

Insert effects 9–24 can be viewed and edited in "4-2. Routing B."

The number of simultaneously usable effects will differ depending on the size of the effect programs, and on how they are assigned.

In this screen you can also select effect programs and edit some of their parameters.

To select a program, use the value dial or press the **Select** button in the screen and choose from a list of effect programs by category.



1. **CH [1…32]**

   Selects the channel to which each insert effect 1 through 8 will be applied.

2. **Insert effect location [IN, TR]**

   Selects whether each insert effect 1 through 8 will be applied to the input (IN) or to the playback track (TR).

3. **Insert EFF 1…8**

   Selects the program for each insert effect 1 through 8. A maximum of eight different effects can be used.

   The cells indicate the currently selected program number, effect name, effect size icon, control icon (only if specified), and on/off icon.

   The letter **"E"** is displayed at the beginning of the effect number to indicate an effect that is being edited.

   : Effect size icon

   Indicates the DSP size of the effect.

   : Control icon

   Indicates an effect to which effect control is assigned.

   /: On/off icon

   Indicates the on (enabled) or off (disabled) status of the effect.

   For the possible combinations and how they will operate, refer to "Effects that can be used simultaneously" (→p.117).

   Due to the input/output structure of the mixer, you cannot use a stereo program for insert effect 8.

4. **MasterEFF 1, 2**

   Here you can select a program for master effects 1 and 2.

   The cells indicate the currently selected program number, effect name, effect size, control icon (only if specified), and on/off icon.

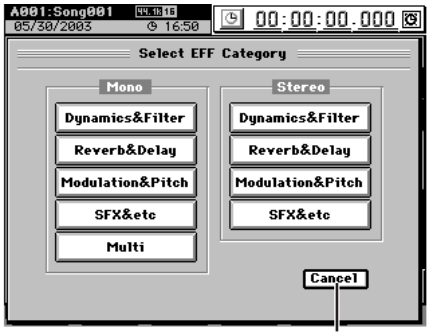
   You cannot use a mono effect program for MasterEFF 1 or 2.

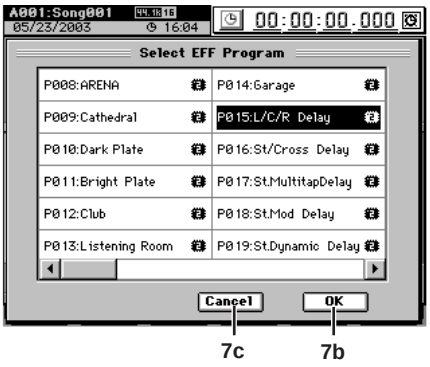
5. **FinalEFF**
   Here you can select a program for the final effect. The cells indicate the currently selected program number, effect name, effect size, control icon (only if specified), and on/off icon.

   You cannot use a mono effect program for FinalEFF.

6. **Navigation buttons**
   Use these to select parameters within the page.

7. **Select**
   Choose the effect you want to use, and then press this button to display the **Select EFF Category** dialog box. Choose the desired category, and use the **Select EFF Program** dialog box to select the effect that you want to use.





   7a. Cancel
   Returns to the **"Routing A"** tab page without selecting a category.

   7b. OK
   After selecting an effect program, press this button to confirm your selection and return to the **"Routing A"** tab page.

   7c. Cancel
   Returns to the **Select EFF Category** dialog box.

8. **On/Off**
   This is available only for a 96 kHz/24-bit song.
   This button switches the currently selected (highlighted) effect on/off. This will affect the amount of DSP Power that is used. If there is sufficient DSP Power, effects that are assigned but off will be turned on.
   If there is insufficient DSP Power so that not all of the assigned effects can be enabled simultaneously, you can use this button to enable/disable effects without changing the effect assignment settings.

9. **DSP Power indicator**
   This shows the DSP Power level. This will indicate 0% if no DSP Power at all is being used, or 100% if all of the DSP Power is being used.
   The DSP Power is halved for a 96 kHz/24-bit song, so watch this indicator and set 8. "On/Off" appropriately.

10. **Restrct (Restructure)**
    This button frees up the DSP power of "dead effects" that are in an unusable state due to their assignments. An effect that is in an unusable state is indicated by the dead icon "".

Effects that can be used simultaneously

The effect programs used by the D32XD's effects are classified as being different "sizes" according to the amount of DSP processing power they consume.
Effect programs of a type for which you can use up to eight of them as **Routing A** insert effects are called "size-one" effect programs. Relative to these, other effect programs are "size-two" and others are "size-four."
The size of an effect program is shown by the icon at the right of the effect name.
One "size" corresponds to one of the on/off icons in each effect cell.

In the case of a 44.1 kHz/48 kHz song, a maximum of sixteen "sizes" worth of effects can be used simultaneously.

In the case of a 96 kHz/24-bit song, a maximum of eight "sizes" worth of effects can be used simultaneously, due to the increased amount of calculating power that must be consumed for effect processing.

note *The available effect processing power for Routing A and B is independent; for each of these, you can use "sixteen sizes worth" of effect programs.*

Techniques for assigning effects

On the D32XD, effects assigned to the upper rows of effect cells will be given higher priority for being turned on. This means that depending on how programs are assigned, you may need to use the **Restrct** button or the **On/Off** buttons to make adjustments while watching the DSP Power indicator, in order to make the best use of the available effects.

note *The priority order also applies to the groupings of Insert, Master, and Final effect. For example if you assign a size-four program to insert effect 7, this will occupy insert effects 7 and 8 and master effect 1, meaning that you will not be able to assign a program to master effect 1.*

Using the Restrct button

First assign a size-one effect to insert effect 1, and a size-two effect to insert effect 2.
Next, let's suppose that you assign a size-two program to insert effect 1.
When you do so, insert effect 2 (whose priority is lower) will be masked by effect 1; you will unable to turn insert effect 2 off, and insert effect 3 will be unavailable.
In this state, insert effect 2 is a "dead effect." The on/off icon of the effect will change to the dead effect icon "".
In this case you can press the **Restrct** button to release the dead effect so that insert effect 3 will again be available, and the wasted DSP power will be recovered.

Using the On/Off button

When assigning effects in a 96 kHz/24-bit song, the usable effect sizes will be halved, and will be On in order of priority (starting from the effect cell in the top row). However, the assignment data of effects that do not get turned on will still be maintained.
If an effect that you actually what to use is turned off, you can turn off one or more effects that are unintentionally on in order to allocate the necessary size, and then turn the desired effect on. When doing so, watch the DSP Power indicator as you choose the effect(s) to turn on or off.

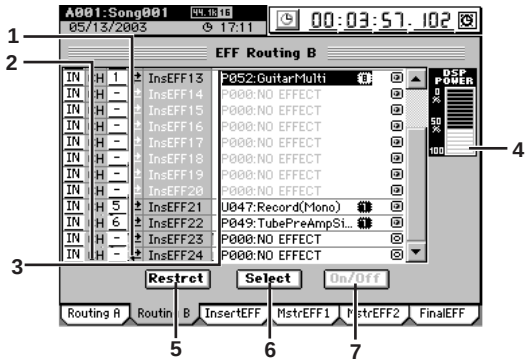
4-2. Routing B

This lists the effect programs and used for inserts 9–24, and their state.

The number of simultaneously usable effects will differ depending on the size of the effect programs, and on how they are assigned.

In this screen you can also select effect programs and edit some of their parameters.
To select a program, use the value dial or press the **Select** button in the screen and choose from a list of effect programs by category.

You cannot use MIDI or pedals to control the parameters of insert effects 9 through 24.



1. **CH** **[1…32]**
   Selects the channel to which each insert effect 9 through 24 will be applied.
2. **Insert effect location** **[IN, TR]**
   Selects whether each insert effect 9 through 24 will be applied to the input (IN) or to the playback track (TR).
3. **Insert EFF 9…24**
   Selects the program for each insert effect 9 through 24. A maximum of sixteen different effects can be used.
   The cells indicate the currently selected program number, effect name, effect size icon, control icon (only if specified), and on/off icon.
   The letter **"E"** is displayed at the beginning of the effect number to indicate an effect that is being edited.

   : Effect size icon
   Indicates the DSP size of the effect.

   /: On/off icon
   Indicates the on (enabled) or off (disabled) status of the effect.

   For the possible combinations and how they will operate, refer to "Insert effects that can be used simultaneously."

   Due to the input/output structure of the mixer, you cannot use a stereo program for insert effect 24.
4. **DSP Power indicator**
   This shows the DSP Power level. This will indicate 0% if no DSP Power at all is being used, or 100% if all of the DSP Power is being used.
   The DSP Power is halved for a 96 kHz/24-bit song, so watch this indicator and set 7. "On/Off" appropriately.
5. **Restrct (Restructure)**
   This button frees up the DSP power of "dead effects" that are in an unusable state due to their assignments. An effect that is in an unusable state is indicated by the dead icon "".
6. **Select**
   Choose the effect you want to use, and then press this button to display the **Select EFF Category** dialog box. Choose the desired category, and use the **Select EFF Program** dialog box to select the effect that you want to use.
7. **On/Off**
   This is available only for a 96 kHz/24-bit song.
   This button switches the currently selected (highlighted) effect on/off. This will affect the amount of DSP Power that is used. If there is sufficient DSP Power, effects that are assigned but off will be turned on.
   If there is insufficient DSP Power so that not all of the assigned effects can be enabled simultaneously, you can use this button to enable/disable effects without changing the effect assignment settings.

Insert effects that can be used simultaneously

The effect programs used by the D32XD's effects are classified as being different "sizes" according to the amount of DSP processing power they consume.
Effect programs of a type for which you can use up to sixteen of them as **Routing B** insert effects are called "size-one" effect programs. Relative to these, other effect programs are "size-two" and others are "size-four."
The size of an effect program is shown by the icon at the right of the effect name.
One "size" corresponds to one of the on/off icons in each effect cell.

In the case of a 44.1 kHz/48 kHz song, a maximum of sixteen "sizes" worth of effects can be used simultaneously.

In the case of a 96 kHz/24-bit song, a maximum of eight "sizes" worth of effects can be used simultaneously, due to the increased amount of calculating power that must be consumed for effect processing.

note *The available effect processing power for Routing A and B is independent; for each of these, you can use "sixteen sizes worth" of effect programs.*

Techniques for assigning insert effects

On the D32XD, lower-numbered effects will be given higher priority for being turned on. This means that depending on how programs are assigned, you may need to use the **Restrct** button or the **On/Off** buttons to make adjustments while watching the DSP Power indicator, in order to make the best use of the available effects.

Using the Restrct button

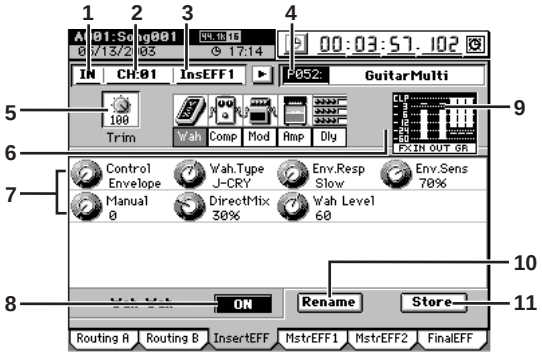
First assign a size-one effect to insert effect 9, and a size-two effect to insert effect 10.
Next, let's suppose that you assign a size-two program to insert effect 9.
When you do so, insert effect 10 (whose priority is lower) will be masked by effect 9; you will unable to turn insert effect 10 off, and insert effect 11 will be unavailable.
In this state, insert effect 10 is a "dead effect." The on/off icon of the effect will change to the dead effect icon "".
In this case you can press the **Restrct** button to release the dead effect so that insert effect 11 will again be available, and the wasted DSP power will be recovered.

Using the On/Off button

When assigning effects in a 96 kHz/24-bit song, the usable effect sizes will be halved, and will be On in order of priority (starting from the lower-numbered effect cell). However, the assignment data of effects that do not get turned on will still be maintained.
If an effect that you actually what to use is turned off, you can turn off one or more effects that are unintentionally on in order to allocate the necessary size, and then turn the desired effect on. When doing so, watch the DSP Power indicator as you choose the effect(s) to turn on or off.

4-3. Insert EFF

You can apply insert effects to input sources during recording, or to tracks during playback.
You can use a maximum of 24 [*8] insert effects. You can use the control knobs located below the LCD screen to edit the parameters for which a knob icon is displayed.



1. **Insert effect location** **[IN, TR]**
   Selects whether the insert effect will be applied to the input (IN) or to the track playback (TR).
2. **CH** **[1…32 [*16]]**
   Selects the channel to which you will apply the insert effect.
3. **Insert effect select**
   Select the insert effect (1–24 [*8]) that you want to edit.

   note *You can also press the **CH SELECT** key to select the insert effect assigned to that channel. If you select a channel to which no insert effect is assigned, the effect will not change.*
4. **Insert effect program**
   Use the value dial to select an effect program, or press the popup button in the screen and choose from a category list of effect programs.
   If the selected program has been edited, the program number's **P** (preset), **U** (user), or **S** (song) indication will change to **"E,"** indicating that the program has been edited.
5. **Trim knob** **[0…100]**
   With a setting of 100, the level will be the same as the input level.
   Lower this level if an excessive input level causes distortion when an effect is applied.
6. **Effect chain display**
   This shows the chain of effects that make up the effect program. When you select (highlight) one of these effects, the editable parameters will appear in "7. Control knob icons."
7. **Control knob icons**
   Use these knobs to edit the parameters of each effect. The parameters and range of values will depend on the effect and parameter. You can turn the control knobs (located below the LCD screen) to edit the value of the corresponding parameter.
   To use the control knobs to edit a parameter in a different row, you can either select the icon in the screen, or use the cursor arrows to move that row.
8. **ON/OFF**
   This is an on/off switch for the selected effect within the effect chain.
   If the button is **OFF**, that effect will be bypassed.
9. **Level meter**
   This shows the input/output level of the effect and the GR (gain reduction) level.
10. **Rename**
    This lets you rename the effect program.
    Select the effect program that you want to rename, press the **Rename** button to open the dialog box, and edit the name. You can assign a name of up to sixteen characters (→p.97).

    After renaming the program, use "11. Store" to store it. The effect program name you edited will be discarded if you don't use to store it.
11. **Store**
    This stores the effect program with its edited parameters and name.
    The user-writable effect programs of the D32XD are 128 user effect programs that can be used by songs on any song drive, and 32 song effect programs for each song.
    Press the button to display the **Store Program** dialog box.

    Press the **"Area"** list button to select U (User) or S (Song), and use the number cell to select the save-destination number.

    note *When choosing the store-destination, choose "U" for programs that you intend to use in other songs as well, and choose "S" for programs that will not be used in other songs or that would cause problems if they were modified.*

    Press the **Yes** button to execute the save, or press the **No** button to cancel.
    When you save, the new data will overwrite the data previously stored in that number, and the previous settings will be lost.

    If you overwrite an effect program that was being used when you stored a scene, be aware that the playback may not sound with the settings you intended.

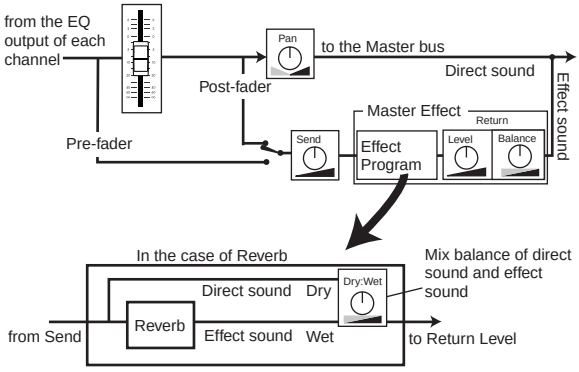
4-4. Master EFF1

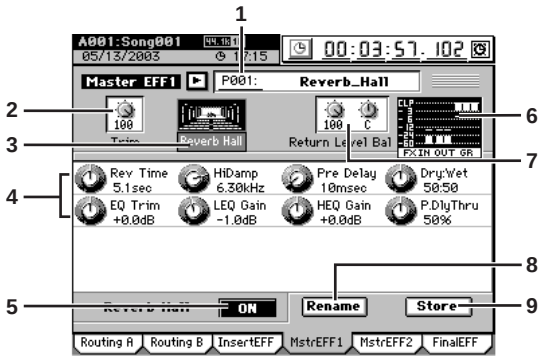
Master effects are used by adjusting the level of the signal being sent from each channel to the master effect in order to create overall depth and balance.
You can use the control knobs located below the LCD screen to edit the effect parameters displayed as knob icons.

Notes about using the master effects

The master effects process the signals sent to them via the effect send control of each channel, and send the processed signal to the effect bus. This means that the direct sound sent from each channel to the master bus will be mixed with the effect sound.
In the case of effects such as reverb or chorus that internally mix the effect sound and the direct sound together before the output, the direct sound passed through the effect will be added to the direct sound sent directly from each channel, meaning that the balance between the direct and effect sound will not be correct.
In such cases, set Dry:Wet (a parameter that adjusts the balance of the effect sound and direct sound) so that the effect will output only the processed (WET) sound. With this setting, the master effect return level will correctly control the mix balance of the effect sound.
If you want to use a master effect as an insert effect, set the send location of the send channel to pre-fader (Pre) and lower the fader to -infinity so that no direct sound will be sent to the master bus. With this setting, the mix balance between the effect sound and dry sound will be controlled by the master effect parameter (Dry:Wet).

Signal flow for the master effect





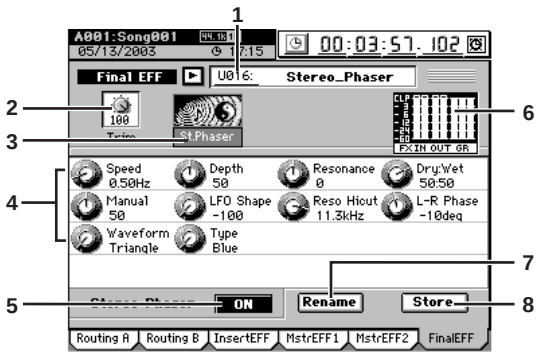
1. **Effect program selection**
   To select an effect program, use the value dial, or press the popup button in the screen and choose from the list of effect programs displayed by category.
   If the selected program has been edited, the program number's **P** (preset), **U** (user), or **S** (song) indication will change to **"E,"** indicating that the program has been edited.
2. **Trim knob** **[0…100]**
   With a setting of 100, the level will be the same as the input level.
   If distortion is caused by an excessively high input level when you apply the effect, use this parameter to lower the input level.
3. **Effect chain display**
   This shows the chain of effects that make up the effect program.
4. **Control knob icons**
   Use these to edit the parameters of each effect.
   For details, refer to "4-3. Insert EFF" (→p.119), 7. Control knob icons.
5. **ON/OFF**
   This is an on/off switch for the selected effect within the effect chain.
   If the button is **OFF**, that effect will be bypassed.
6. **Level meter**
   This shows the input/output level of the effect and the GR (gain reduction) level.
7. **Effect return**
   Sets the effect return level and balance.
8. **Rename**
   Use this to rename an effect program.
   For details, refer to "4-3. Insert EFF" (→p.119), 10. Rename.
9. **Store**
   Use this to store the effect program whose parameters or name you have edited.
   For details, refer to "4-3. Insert EFF" (→p.119), 11. Store.

4-5. Master EFF2

For details on the parameters, refer to the section above, "4-4. Master EFF1."

4-6. Final EFF

The final effect is used to make final adjustments to the overall sound in the last stage of the master bus. Here you can use one stereo effect program.
You can use the control knobs located below the LCD screen to edit the parameters displayed as knob icons.



1. **Effect program selection**
   To select an effect program, use the value dial, or press the popup button in the screen and choose from the list of effect programs displayed by category.
   If the selected program has been edited, the program number's **P** (preset), **U** (user), or **S** (song) indication will change to **"E,"** indicating that the program has been edited.
2. **Trim knob** **[0…100]**
   With a setting of 100, the level will be the same as the input level.
   If distortion is caused by an excessively high input level when you apply the effect, use this parameter to lower the input level.
3. **Effect chain display**
   This shows the chain of effects that make up the effect program.
4. **Control knob icons**
   Use these to edit the parameters of each effect.
   For details, refer to "4-3. Insert EFF" (→p.119), 7. Control knob icons.
5. **ON/OFF**
   This is an on/off switch for the selected effect within the effect chain.
   If the button is **OFF**, that effect will be bypassed.
6. **Level meter**
   This shows the input/output level of the effect and the GR (gain reduction) level.
7. **Rename**
   Use this to rename an effect program.
   For details, refer to "4-3. Insert EFF" (→p.119), 10. Rename.
8. **Store**
   Use this to store the effect program whose parameters or name you have edited.
   For details, refer to "4-3. Insert EFF" (→p.119), 11. Store.

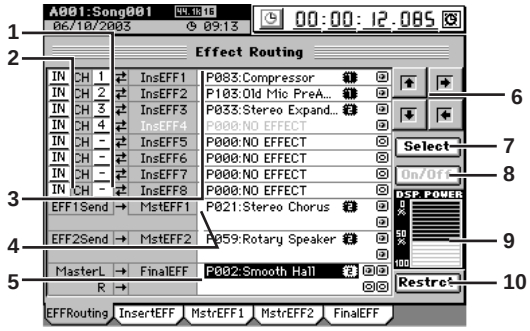
D16XD

4-1. Effect Routing

This lists the effect programs used by the insert 1–8, master, and final effects, and shows their status.
The D32XD/D16XD lets you use up to eight insert effects, two master effects, and one final simultaneously.

The number of simultaneously usable effects will differ depending on the size of the effect programs, and on how they are assigned.

In this screen you can also select effect programs and edit some of their parameters.
To select a program, use the value dial or press the **Select** button in the screen and choose from a list of effect programs by category.
For details on the parameters and value, refer to D32XD "4-1. Routing A".



Effects that can be used simultaneously

The effect programs used by the D32XD/D16XD's effects are classified as being different "sizes" according to the amount of DSP processing power they consume.
Effect programs that allow up to eight insert effects to be used are called "size-one" effects. Relative to these, some effect programs are "size-two" and others are "size-four."
The size of an effect program is shown by the icon at the right of the effect name.
One "size" corresponds to one of the on/off icons in each effect cell.

In the case of a 44.1 kHz/48 kHz song, a maximum of sixteen "sizes" worth of effects can be used simultaneously.

In the case of a 96 kHz/24-bit song, a maximum of eight "sizes" worth of effects can be used simultaneously, due to the increased amount of calculating power that must be consumed for effect processing.

Techniques for assigning effects

On the D32XD/D16XD, effects assigned to the upper rows of effect cells will be given higher priority for being turned on. This means that depending on how programs are assigned, you may need to use the **Restrct** button or the **On/Off** buttons to make adjustments while watching the DSP Power indicator, in order to make the best use of the available effects.

note *The priority order also applies to the groupings of Insert, Master, and Final effect. For example if you assign a size-four program to insert effect 7, this will occupy insert effects 7 and 8 and master effect 1, meaning that you will not be able to assign a program to master effect 1.*

Using the Restrct button

First assign a size-one effect to insert effect 1, and a size-two effect to insert effect 2.

Next, let's suppose that you assign a size-two program to insert effect 1.

When you do so, insert effect 2 (whose priority is lower) will be masked by effect 1; you will unable to turn insert effect 2 off, and insert effect 3 will be unavailable.

In this state, insert effect 2 is a "dead effect." The on/off icon of the effect will change to the dead effect icon "☠".

In this case you can press the **Restrct** button to release the dead effect so that insert effect 3 will again be available, and the wasted DSP power will be recovered.

Using the On/Off button

When assigning effects in a 96 kHz/24-bit song, the usable effect sizes will be halved, and will be On in order of priority (starting from the effect cell in the top row). However, the assignment data of effects that do not get turned on will still be maintained.

If an effect that you actually what to use is turned off, you can turn off one or more effects that are unintentionally on in order to allocate the necessary size, and then turn the desired effect on. When doing so, watch the DSP Power indicator as you choose the effect(s) to turn on or off.

4-2. Insert EFF

Refer to D32XD "4-3. Insert EFF" (→p.119)

4-3. Master EFF1

Refer to D32XD "4-4. Master EFF1" (→p.120)

4-4. Master EFF2

Refer to D32XD "4-4. Master EFF1" (→p.120)

4-5. Final EFF

Refer to D32XD "4-6. Final EFF" (→p.121)

5. CD

Here you can use the internal CD-RW drive to create or play audio CDs.

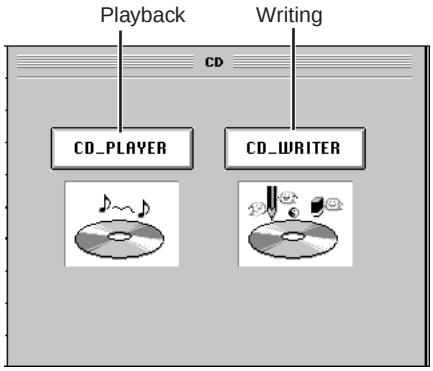
Some audio CD players may be unable to play a CD-R/RW disc.

Some audio CD players are unable to play the first 100 msec of an audio track. To avoid this, we recommend that when creating an audio CD, you leave a blank of about 300–600 msec at the beginning of the song for track 1. (→p.123 "5-1. Album CD Project", 6. Gap)

Music discs utilizing copy-protection technology that does not comply with the Compact Disc (CD) specification cannot be played back.

When you press the **CD** key, this page jump menu will appear. Press either the **CD PLAYER** button or the **CD WRITER** button.

You can return to this page jump menu by pressing the **CD** key.



CD PLAYER

1. **CD Monitor**
   When this is on (highlighted), the audio output of the internal CD-R/RW drive will be sent to the monitor bus. If this is off, the output will not be sent to the monitor bus.
   This setting is valid only in this page; it will automatically be turned off when you switch pages.

   *If **CD Monitor** is on, other signals will not be output to the monitor bus.*

   note *If the audio output of the internal CD-R/RW drive is assigned in the **MIXER, INPUT/OUTPUT/CH ASSIGN**, **"Ch Assign"** tab page to a mixer channel, you will be able to listen to the CD even if **CD MONITOR** is off. In this case, the sound will be routed through the mixer (including EQ and effects).*

2. **Information window**
   The upper line displays the track number and messages. The lower line shows the state (playing, stopped, etc.) of the CD player, the elapsed time, and the level meter.

3. **Control buttons**
   Use these buttons to access the playback controls and to select tracks on the audio CD.
   ▶: Plays the track.
   ■ : Stop the track.
   ❚❚ : Pauses the track.
   ⏮ : Moves to the preceding track each time you press this button. If you press this during playback, you will move to the beginning of the currently-playing track.
   ◀◀ : Rewinds the track.
   ▶▶ : Fast-forwards the track.
   ⏭ : Moves to the next track each time you press this button. If you press this during playback, you will move to the beginning of the next track.

   You cannot eject the CD while paused. If you switch to another page while paused, the CD player will change from Pause to Stop.

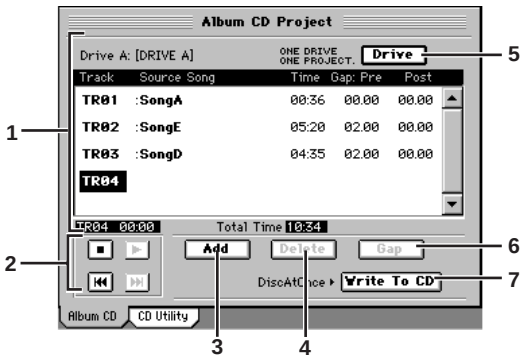
CD WRITER

5-1. Album CD Project

Album CD Project lets you create an audio CD using Disc At Once. The data will be written to the CD-R/RW as 16-bit/44.1 kHz data in audio CD format.

The disc is written using the Disc At Once method, including finalization. No further data can be written to the disc afterward.

The CD-R/RW cannot be written if there is a track less than four seconds long. Adjust your settings so that the PostGapTime and the track time add up to at least four seconds.



1. **Track list**
   This displays a list of the songs that will be written to the CD-R/RW disc as an album CD.
   The list shows the track numbers, song name (mark name), time, pre-gap, and post-gap of the tracks you registered for the album CD.
   At the bottom of the window, the duration of the selected (highlighted) track and the total time of the album are displayed.

2. **Preview player**
   These buttons let you play back the songs shown in the list.
   ▶ : Plays the song.
   ■ : Stops the song.
   ⏮ : Moves to the preceding song each time you press this button. If you press this during playback, you will move to the beginning of the currently-playing song.
   ⏭ : Moves to the next song each time you press this button. If you press this during playback, you will move to the beginning of the next song.

   You cannot use these buttons if the list contains no songs.

3. **Add**
   This button adds a song to the list of songs that will be written to the CD-R/RW disc. Select the track number and press the button to display the **Add TR** dialog box. Select the desired song from the song list.
   The song number, song name, mark icon, sampling frequency/bit-depth, protect icon, and date of each song will be displayed.
   The song data that will be written to the CD-R/RW will be the song data as of when you pressed **Add** button. If you edit that song after pressing the **Add** button, you will need to add that song to this list once again if you want to write the updated data.

Cancel button

Returns to the **"Album CD"** tab page without adding the selected song to the list.

OK button

Adds the selected song to the list.

When you press this button, the display will ask **"Are you sure?"** Press **Yes** to confirm your settings (or **No** to discard them) and return to the **"Album CD"** tab page.

You cannot add a song whose master track contains no data.

If you select a song that is other than 44.1 kHz/16-bit, press the **Dither** button to turn it on (highlighted), and the sampling frequency and bit-depth will be converted. The converted data will consume additional disc capacity. If the song has a different sampling frequency, conversion will be performed; this will take a certain amount of time to complete.

Only the data to be burned to the CD-R/RW disc will be converted; the song data itself will remain in its original sampling frequency and bit-depth.

4. **Delete**

Deletes a song from the track list. In the list, choose the song that you want to delete and press this button to display the **Delete** dialog box. Press the **Yes** button to delete the song from the list. Subsequent song tracks will be moved back one track.

If you want to delete all songs from the list, press the **Select All** button and then press the **Yes** button.

5. **Drive**

Selects the drive that contains the songs you want to write to the CD-R/RW disc. When you press this button, the **Select Drive** dialog box will appear.

The dialog box will display the total capacity of the internal drive, and a list of the song drives.

For each song drive, the display will show the drive name, partition size, partition name, amount used, and remaining space.

The songs to be written to one CD-R/RW disc must all be on one song drive.

6. **Gap**

This lets you specify a duration of silence that will be inserted before and after a song. When you press the button, the **Edit Gap** dialog box will appear.

In this dialog box, **Frm** refers to a CDDA Frame, where 75 Frm = one second.

6a. PreGapTime [0…59 (sec), 0…75 (Frm)]

Specifies the duration of silence to be inserted before the track (song). The default is two seconds.

The default setting will be 0 seconds for the song added to TR1 (track 1) or for a track divided by album CD track marks (→p.148).

6b. PostGapTime [0…59 (sec), 0…74 (Frm)]

Specifies the duration of silence to be inserted after the track (song). The default is 0 seconds.

7. **Write To CD**

Executes writing to the CD-R/RW.

When you press this button, the **Write to CD** dialog box will appear, displaying a message of **"Obey Copyright Rules."** Carefully read the section "COPYRIGHT WARNING" (→p.iii), and use this function only if you accept the terms.

- When you press the **Yes** button, the **Write to CD** dialog box will appear.
- Use the **"Write Speed"** list button to specify the speed at which the data will be written to CD-R/RW.
- When you press the **Yes** button, the D32XD/D16XD will begin creating the image file. You can press the **Cancel** button to abort this process.
- When the image file has been created, the D32XD/D16XD will begin writing the disc. This cannot be aborted.
- The disc will automatically be finalized.
- When the disc has been written a message of **"Write Anoter CD?"** will appear.
- If you want to create another identical CD, press the **Yes** button. If not, press the **No** button.

If you press the **Yes** button, a message of **"Insert Next Disc. After Insert, Press OK."** will appear, and the CD-R/RW drive tray will open. Insert another CD and press the **OK** button.

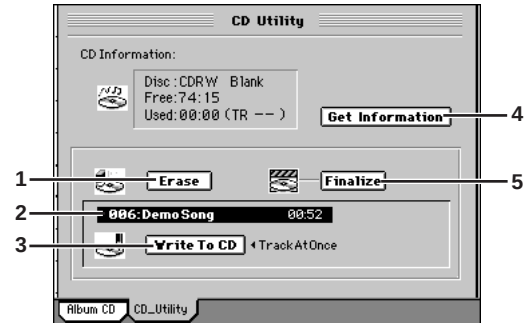
If you successively write another disc, the D32XD/D16XD will not need to create the image file again, so the process will take less time.

*A CD-R/RW disc written using **Album CD Project** will be finalized automatically.*

Changing the writing speed will not affect the time that is required to create the temporary image file that is created before writing an audio CD.

5-2. CD Utility

Here you can write an audio CD Track using the Track At Once method, erase a CD-RW disc, or finalize a disc. Additional data can be written to a disc until the disc is finalized.



1. **Erase**
   This erases all the data that has been written to a CD-RW disc.
   When you press this button, the **Erase CD-RW** dialog box will appear. Use **"Option"** to select the method of erasure, and press the **Yes** button to erase the disc.
   Quick: Erase the disc quickly.
   Full: Erase the disc completely. Use this if you experience problems such as if a disc erased using Quick cannot be recognized. This method will require more time.

   This operation cannot be performed on a CD-R disc. Data that is erased by this operation cannot be recovered.

2. **Track cell**
   This shows the song number, song name, and recording time of the song whose track you will write to the CD.

3. **Write To CD**
   This button writes the song shown in the track cell to the CD-R/RW disc.
   When you press this button, the **Write to CD** dialog box will appear, displaying a message of **"Obey Copyright Rules."** Carefully read the section "COPYRIGHT WARNING" (→p.iii), and use this function only if you accept the terms.
   - When you press the **Yes** button, the **Write to CD** dialog box will appear.
   - Use the **"Write Speed"** list button to specify the speed at which the data will be written to CD-R/RW.
   - When you press the **Yes** button, the D32XD/D16XD will begin creating the image file. You can press the **Cancel** button to abort this process.

   note *If the song has a different sampling frequency, conversion will be performed; this will take a certain amount of time.*

   - When the image file has been created, the D32XD/D16XD will begin writing to the disc. This cannot be aborted.
   - When the disc has been written a message of **"Write Anoter CD?"** will appear.
   - If you want to create another identical CD, press the **Yes** button. If not, press the **No** button.

   If you press the **Yes** button, a message of **"Insert Next Disc. After Insert, Press OK."** will appear, and the CD-R/RW drive tray will open. Insert another CD and press the **OK** button.
   If you successively write to another disc, the D32XD/D16XD will not need to create the image file again, so the process will take less time.

4. **Get Information**
   When you press this button, the type of disc inserted in the CD-R/RW drive, the remaining writable time, the already-written time, and the number of tracks will be read and displayed in the screen.

   Disc type
   NoDisc: No disc is inserted. Alternatively, the disc cannot be recognized.
   CDR: An unfinalized (writable) CD-R
   CDRW: An unfinalized (writable) CD-RW
   Illegal: The disc cannot be recognized

   If nothing is displayed, the disc is not writable (e.g., a commercial audio CD or a finalized CD-R/RW).

   Disc content
   Blank: A blank disc containing no data
   Audio: A disc containing audio data
   Data Disc: A disc containing backup data, WAV etc.
   Other: A disc containing data other than audio or backup data.

   Disc capacity usage

   If the disc content is Audio
   Free: Remaining recordable time
   Used: Recorded time and total number of tracks

   If the disc content is Data Disc
   Free: Remaining storage capacity (MB)
   Used: Used storage capacity (MB)

   If the disc content is Other
   nothing will be displayed.

5. **Finalize**
   This button finalizes the disc.
   In order for a CD-R/RW disc created by the D32XD/D16XD to be played in an audio CD player, you must execute this Finalize operation. A disc can be finalized only once.
   The **Finalize** dialog box will appear when you press this button. Press the **Yes** button to execute.

   This can be used only to finalize a Track At Once audio CD that was written in this screen.

   *Once a disc has been finalized, no further songs can be written to it. This means that you must first write all of the desired songs to the disc, and then press the **Finalize** button to finalize the disc.*

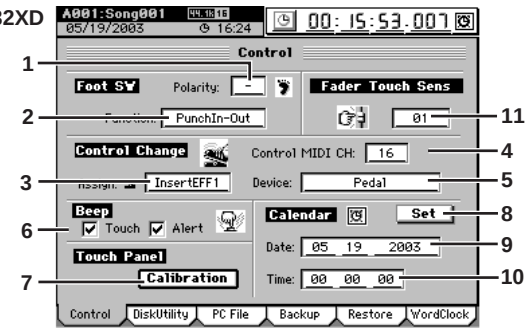
   You cannot play back a disc that has not been finalized.

6. SYSTEM

6-1. Control

D16XD

D32XD



1. Polarity **[–, +]**

Specifies the polarity of the foot switch.
Connect a foot switch (separately sold option: PS-1 or equivalent) to the front panel FOOT SW jack, and set this parameter so that the "👣" symbol lights when you press the foot switch.

2. Function **[PunchIn-Out, Mark, PlayStop]**

Selects the function that will be controlled by the foot switch.

PunchIn-Out
Perform manual punch-in and punch-out recording (i.e., switch between recording and playback).
Set the **PLAY/REC** key of the desired track to REC, and begin playback. Recording will begin the moment you press the foot switch, and will end when you press the foot switch once again.

Mark
When you press the foot switch, a mark will be registered at that location. While this tab page is displayed, the foot switch is used to detect the polarity, and will not perform the assigned function. While you are recording tap tempo, the foot switch will perform tap input regardless of the setting here.

Play/Stop
Switch between playback start and stop. Press the foot switch to start playback, and press it again to stop playback.

3. Control Change Assign
[Off, InsertEFF1…8, MasterEFF1, 2, FinalEFF]

Here you can select the effect that you want to control. The effect you select here can be controlled by 5. "Device."

Off:
No effect will be controlled.

InsertEFF1…8:
Control an insert effect 1, 2, …8 respectively.

MasterEFF 1, 2:
Control master effect 1 or 2.

FinalEFF:
Control the final effect.

If the effect program you are using has no control function, it cannot be controlled. Nor is control possible unless Ctrl is turned on (→p.119) in the effect chain display for the effect program.

Insert effects 9–24 of the D32XD cannot be controlled even if you select an effect that has control functions.

4. Control MIDI CH **[1…16]**

Specifies the channel that will be used to control the internal effect via MIDI.
Set this to the MIDI channel that you are using for control.

5. Device
[Pedal, After Touch, Pitch Bend, Velocity, Note Number, CC#000…119]

Selects the external device that will control one of the D32XD/D16XD's internal effects. The effect you specify in 3. "Control Change Assign" can be controlled in real-time.

Pedal:
An expression pedal will control the effect. Connect an expression pedal (such as the separately sold XVP-10 or EXP-2) to the EXPRESSION PEDAL jack, and move the pedal to control the effect.

After Touch, Pitch Bend, Velocity, NoteNumber:
MIDI aftertouch, pitch bend, velocity, or note number data will control the effect.
Connect the MIDI OUT of an external MIDI device to the D32XD/D16XD's MIDI IN connector, and transmit the appropriate MIDI data from the external MIDI device to control the effect.

CC (Control Change) #000…119:
A MIDI control change number will control the effect.
Connect the MIDI OUT of an external MIDI device to the D32XD/D16XD's MIDI IN connector, and transmit the appropriate MIDI control change message from the external MIDI device to control the effect.

6. Beep

If "Touch" is checked, a beep tone will sound when you press a button in the touch panel or select an edit cell.
If "Alert" is checked, a beep tone will sound when CD-R/RW writing is completed or when an operating error occurs.

note *A sustained "beeeep" indicates successful completion; a "bip bip bip ..." indicates an error.*

If you want to silence the beep tone, uncheck both of these options.

7. Calibration

When you press this button, the **Touch Panel Calibration** dialog box will appear.
If you are unable to perform input in the LCD screen as you expect, or if pressing the LCD screen selects a button or cell in a location other than where you pressed, perform this adjustment to correct any discrepancy between the LCD screen and the touch panel.
For details, refer to "Touch Panel Calibration" (→p.95) in the Operation section.

8. Calendar Set

This activates the 9. "Date" and 10. "Time" settings you specified. The settings will take effect the moment you press this button.

9. Date

This displays (and lets you set) the current date, displayed as Month:Date:Year (four digits).

10. Time

This displays (and lets you set) the current time, displayed in 24-hour time as Hours:Minutes:Seconds.

D32XD

11. Fader Touch Sens **[1…16]**

This adjusts the faders' sensitivity to touch. Higher settings make the faders more sensitive.

D16XD

12. Fader/Knob Control [Match, Jump]

After you have used the **value dial** (or the **+/–** keys) to edit fader or pan values, or after scene settings have been loaded, the parameter values may not match the positions of the physical faders or pan knobs.

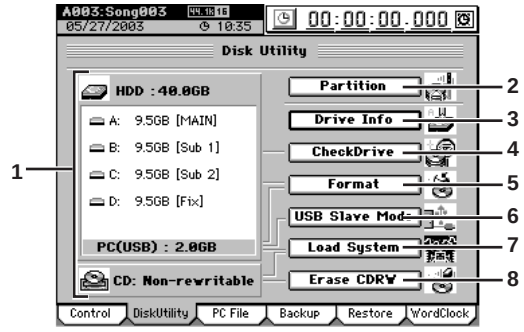
In such cases, the setting you select here will determine the way in which the parameter values will be made consistent with fader or pan knob movements.

Match: After the fader or pan knob reaches the value stored for that parameter, then the value will smoothly change to reflect the current knob or fader position.

Jump: Parameter values will jump to the fader or pan knob location the instant the fader or pan knob is moved.

6-2. Disk Utility

Here you can format a drive, create partitions, and check a drive.



1. Drive list (HDD, CD)

This displays information about the drive (capacity, drive name).

HDD: Hard Disk Drive

The upper area shows the total capacity of the hard disk.

The middle area shows the partition drive names (A–D), the capacities, and the song drive name.

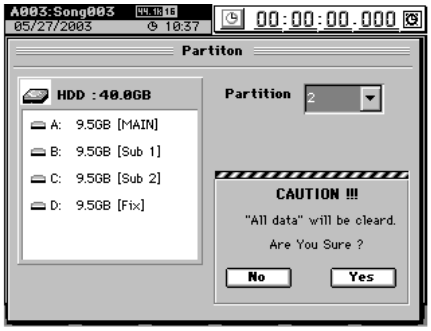
The lower area shows the 2.0 GB PC (USB) area. This drive is referred to as the PC drive.

CD: Indicates the type of CD, CD-R, or CD-RW.

2. Partition [1…4]

Here you can make partition settings.

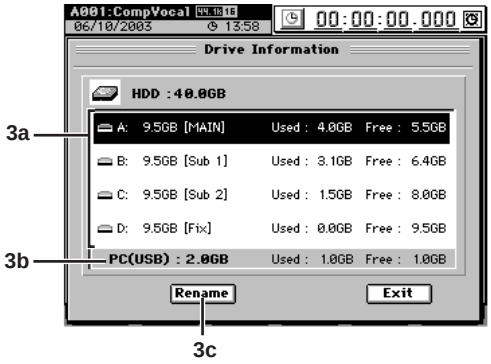
When you press this button, the **Partition** dialog box will appear. Specify the number of partitions you want to create, and press the **Yes** button to execute the settings. If you decide not to execute, press the **No** button.



When you execute the Partition operation, the data on that drive will be lost.

3. Drive Info

Here you can view information about the hard disk. When you press this button, the **Drive Info** dialog box will appear. Press the **Exit** button to return to the **"DiskUtility"** tab page.



3a. Song drive list

This displays the song drives.

The partition drive name (A–D), total capacity, song drive name, used capacity, and free capacity are displayed.

3b. PC drive

This displays the PC drive.

The total capacity, used capacity, and free capacity are displayed.

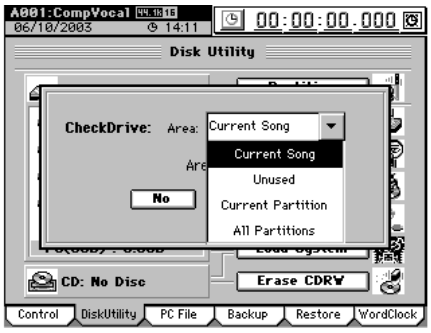
3c. Rename

In the song drive list, select the song drive that you want to rename, and press this button. Use the **Rename** dialog box to edit the name (→p.97).

Press the **Yes** button to execute the settings. If you decide not to execute, press the **No** button.

4. Check Drive

This checks and repairs errors in the songs on the hard disk. Execute this operation if the **"Disk too busy."** error message appears frequently. After executing this, you can continue using the song data unless there was a major error on the drive.



Press the **Area** ▼ button to display the list.

Current Song

Check and repair the area used by the currently selected song.

Unused

Check and repair the first 2 GB of the currently-unused area.

Current Partition

Check and repair the area of the currently selected partition.

All Partition

Check and repair all partitions and the area used by the system.

Specify the desired **Area**, and press the **Yes** button to execute the Check Drive operation. If you decide not execute, press the **No** button.

note *Executing the **"Edit Track"** operation **"OptimizeTrk"** (→p.142) will also improve the state of tracks that produce **"Disk too busy."** errors. Use the Check Drive command if executing **OptimizeTrk** does not eliminate the **"Disk too busy."** errors.*

*Check Drive requires a substantial length of time for execution. If the hard disk has a capacity of 40 GB, executing this command for **All Partition** will require approximately 7 hours.*

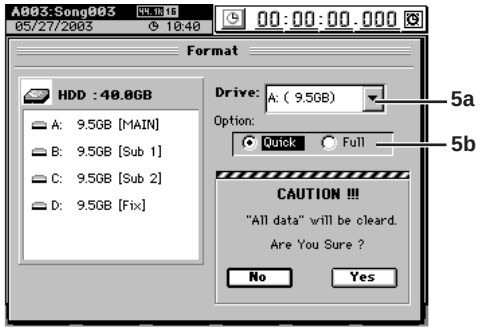
5. Format

This formats the hard disk.

When you press the button, the **Format** dialog box will appear. Select the drive you wish to format and the desired option, and press the **Yes** button to execute formatting. If you decide not to format, press the **No** button.

When you execute the Format operation, the data on that drive will be lost.

You cannot cancel this operation once formatting has begun.



5a. Drive

Select the drive that you want to format.

A…D: an individual song drive
A–D: all song drives
PC: the PC drive
ALL: the entire hard disk

5b. Option

Select the type of formatting.

Quick:

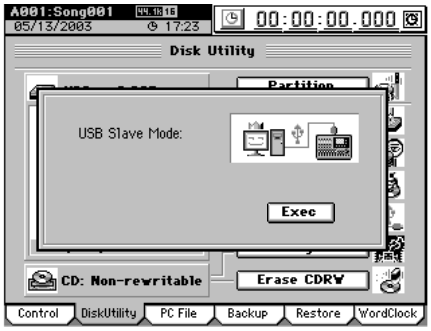
Since only the system area will be formatted, this will not require very much time.
ALL → approximately 7 seconds for 40 GB

Full:

Execute this if the **"Drive Error occurred."** message appears frequently during playback. Use this method if you still experience problems after performing a Quick format, such as the drive failing to be recognized. This will require a substantial length of time.
ALL → approximately 7 hours for 40 GB

6. USB Slave Mode

Places the D32XD/D16XD in USB Slave mode. When the D32XD/D16XD is in this mode, data can be transferred between the D32XD/D16XD's internal PC drive and your personal computer. To execute this mode, perform the "Safely Remove Hardware" (→p.92) operation on your computer, and then press the **Exit** button in the **USB Slave** dialog box.



7. Load System

This loads system files to update the operating software.

When you press this button, the **Load System** dialog box will appear. Use **"Source"** to select the system file that you want to load, and press the **Yes** button to begin the update.

For details, refer to "Upgrading the system" (→p.95).

8. Erase CDRW

This lets you erase all data from the CD-RW inserted in the CD-R/RW drive.

When you press this button, the **Erase CDRW** dialog box will appear. Press an **Option** button to select the desired method, and press the **Yes** button to erase the disc. If you decide not to execute, press the **No** button.

Quick: Erases the data of the CD-RW disc at high speed.

Full: Completely erase the CD-RW disc. Use this method if you still experience problems after performing a Quick erase, such as the disc failing to be recognized. This method will require more time.

You cannot execute this on a CD-R disc. Erased data cannot be recovered.

6-3. Edit PC File

Here you can view, delete, and rename the folders and files in the PC drive.
By connecting the D32XD/D16XD's USB connector to your personal computer, you can save data from the PC drive onto your computer.

You can save the following data on the PC drive.

Song data

This is data for each track, mixer settings, and effect settings.
Since this data is in a proprietary Korg format, it cannot be played back or edited as audio data on any device other than the D32XD/D16XD, such as a computer. In order to play this data, you must Restore it into the D32XD/D16XD.

User data

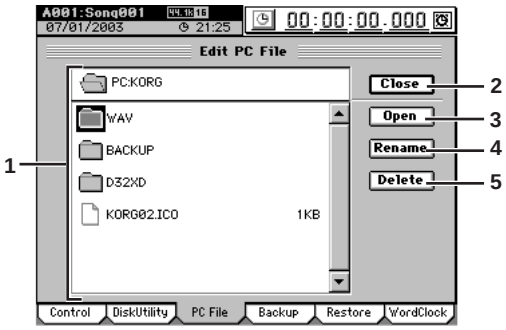
This is user-editable data such as user effect program data and compressor program data. Since this data is in a proprietary Korg format, it cannot be edited on a computer or other device.
In order to use this data, you must Restore it into the D32XD/D16XD.

Audio files

Audio files are 44.1/48/96 kHz, 16-bit/24-bit WAV format data. For details on creating audio files, refer to "2-2. Exporting an audio file" (→p.86).

For details regarding limitations on files, refer to "More about drives and files" (→p.174).

*Do not delete files named **"AUTORUN.INF"** or **"KORG01.ICO,"** since these contain settings.*

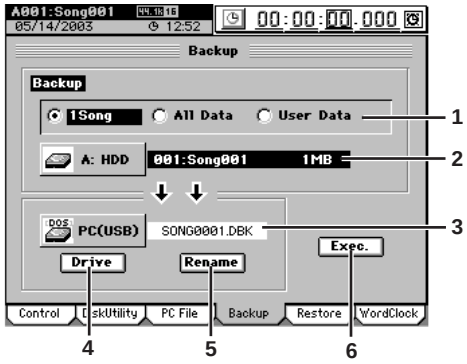


1. **File list**
   This area lists the files.
   Upper area: PC folder names (:folder names…)
   Lower area: folders/file names
2. **Close**
   Moves to the next higher folder level.
3. **Open**
   If a folder is selected, opens that folder.
4. **Rename**
   Renames a file (→p.97).
   For details regarding limitations on file names, refer to "More about drives and files" (→p.174).
5. **Delete**
   Deletes the selected file.

6-4. Backup

This operation saves back-up data to CD-R, CD-RW, or the PC drive.

For details regarding limitations on files, refer to "More about drives and files" (→p.174).



1. **Backup** **[1Song, All Data, User Data]**
   Select the type of data that you want to back up.

   1Song
   From the selected drive, back up the data for one song, and the user data.

   All Data
   Back up all song data on the selected drive, the user data, and the Album CD Project.

   User Data
   Backup only the user data (user effect programs, user EQ library, user comp programs)

   note *Song data includes the song effect program data.*
2. **Backup source**
   This displays the drive etc. for the song you selected in the **SONG**, **"SelectSong"** tab page (→p.135).
   Depending on the contents of the backup, the backup-source drive, song number, song name, user effect data, and the size of the backup data will be displayed.
3. **Backup destination**
   This displays the backup-destination drive and the name of the file in which the data will be saved.
4. **Drive** **[CD, PC (USB)]**
   This selects the backup-destination drive. The **Select Drive** dialog box will appear when you press this button. Use the radio buttons to select a drive, and press the **OK** button.
5. **Rename**
   This lets you rename the backup file. Press this button to display the **Rename** dialog box. Edit the file name and press the **OK** button.
   For details on the allowable file names, refer to "More about drives and files" (→p.174).
6. **Exec.**
   This executes the backup.
   Press this button and the **Backup** dialog box will appear, showing the space required for the backup.
   - If you are backing up to the PC drive, check the free space and press the **OK** button.
   - If you are backing up to CD, prepare the necessary number of CD-R/RW media to accommodate the backup, specify the writing speed, and press the **OK** button.

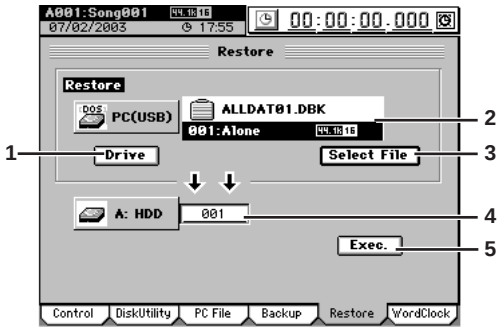
6-5. Restore

This operation restores song and user data that you previously saved using the Backup operation.
From a **"1Song"** backup file you can restore that one song and user data.

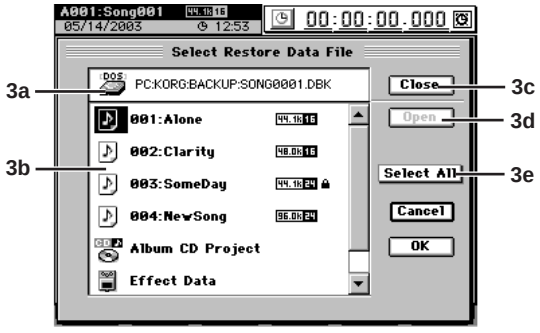
From an **"All Data"** backup file, you can restore either one selected song, or all song data and album CD project data.

From a **"User Data"** backup file, you can restore user effect program, user EQ library, and user comp program data.

For details regarding limitations on files, refer to "More about drives and files" (→p.174)



1. **Drive** **[CD, PC (USB)]**
   This selects the backup-source drive. Press this button to display the **Select Drive** dialog box. Use the radio buttons to select a drive, and press the **OK** button.
2. **Restore file**
   This displays the file that will be restored.
   If you are restoring from the CD drive, insert the disc containing the backup into the drive.
3. **Select File**
   Press this button to display the **Select Restore Data File** dialog box, and select the data that you want to restore. Select the data that you want to restore, and then press the **OK** button.



3a. Restore-source display
This area displays the restore-source drive and folder name.

3b. File list
This area lists the folders, files, and data contained in the restore-source.

3c. Close
Moves to the next higher folder.

3d. Open
If the selected item is a folder, opens that folder.

3e. Select All
Press this if you want to restore all the data displayed in the file list.

4. **Restore destination**
   This displays the restore-destination drive, and lets you select the song number.
   If you are restoring **"1Song,"** the data will be restored to the song number you select here.
   The restore-destination drive will indicate the drive of the song selected in the **SONG**, **"SelectSong"** tab page.
5. **Exec.**
   Press this to execute the restore operation. The restore-source song and/or user data will be restored to the restore-destination drive.

Song data
When you restore one or more songs, the restored song(s) will be inserted at the specified song number of the current drive. Songs following the restore-destination number will be renumbered higher by one. They will not be overwritten.

Album CD Project
When you restore Album CD Project data, the album CD project data of the current drive will be overwritten.

Other data files
When you restore other types of data, the corresponding data files will be overwritten.

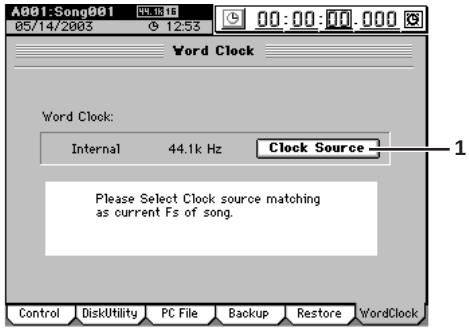
Restoring all data files in the file list at once
When you restore, the song data will be loaded following the songs of the current drive, and other data files (such as user data and album CD project data) will be overwritten.

The restore-destination capacity will be checked before restoring 1Song or All Songs. If there is insufficient capacity, the operation will not be executed.

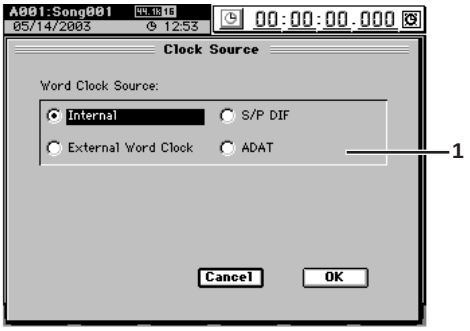
6-6. Word Clock

The **"Word Clock"** tab page displays the current word clock source and frequency, and lets you make synchronization settings for the audio data clock.

You may hear noise if synchronization cannot be achieved. Before you change these settings, please turn down the faders or turn down the volume of your monitor system.



1. **Clock Source**
   Press this button to display the **Clock Source** dialog box. Select a clock source, and press the **OK** button to display the **Working** dialog box. If you decide not to change the clock source, press the **Cancel** button. Synchronization to 44.1 kHz, 48 kHz, and 96 kHz is supported, but 96 kHz is not supported for ADAT.
   Internal: Synchronize to the internal clock.
   S/P DIF: Synchronize to the S/P DIF clock.
   External Word Clock: Synchronize to the word clock.
   ADAT: Synchronize to the ADAT clock.



When the clock calculation is finished, the display will indicate **"Completed."** Press the **OK** button, and the **"Word Clock"** tab page will indicate the frequency of the clock source.
If the display indicates **"Error,"** check the **"Clock Source"** settings and the connections of your devices.

*You can select **Word Clock** or **ADAT** only if the optional ADAT I/O board (DIB-8) is installed.*

*If the digital input audio sounds wrong, or if **"Audio Sync Error"** is displayed, check the **"Clock Source"** setting or the connections from your other equipment.*

*If you have selected other than **"Internal"** as the **"Word Clock Source,"** the D32XD/D16XD will stop operating if the clock is interrupted during recording/playback or if the clock frequency changes. If the D32XD/D16XD stops operating due to a clock problem during recording, please format that song drive.*

*The clock source setting is not saved. **"Clock Source"** will always be set to **"Internal"** when you select a song or when you turn on the power.*

7. MIDI/SYNC

7-1. MIDI/MMC

On the D32XD/D16XD you can use MIDI to do the following things.

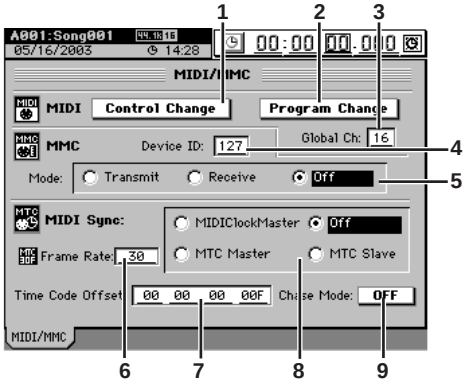
- Control effects (→p.59)
- MTC Synchronizing with a sequencer or other MIDI device (→p.93)
- Switch scenes (→p.53)
- Use control changes to control mixer parameters

The D32XD/D16XD can transmit and receive MMC (**M**IDI **M**achine **C**ontrol) messages.
This means that when synchronizing two D32XD/D16XD units, or when using the D32XD/D16XD with a MMC-compatible MIDI sequencer, you can control operations such as song playback, stop, and fast-forward from the master device.

You can use MIDI Time Code to synchronize the D32XD/D16XD with an external MIDI sequencer or other device, so that the D32XD/D16XD's track audio will play back in synchronization with external MIDI source sources.
The D32XD/D16XD can operate in synchronization with an external MIDI device by using MTC (MIDI Time Code) synchronization.
The device that outputs the synchronization clock is called the master, and the device that receives this clock is called the slave. The D32XD/D16XD can function either as the master or slave.

Some MIDI devices may not support the MMC functionality of the D32XD/D16XD. For details on the MMC functionality of the D32XD/D16XD, refer to the MIDI implementation.

*MIDI Clock can be received if you select MIDI Clock in the **TEMPO "Tempo Track"** tab page and record the tempo track.*



1. **Control Change**
   Here you can turn control change message reception/transmission on (highlighted) or off.
   When you operate mixer parameters, the D32XD/D16XD will transmit corresponding messages. These messages can be recorded on an external MIDI sequencer, and the re-transmitted back to the D32XD/D16XD to control the corresponding mixer parameters.
   For details on the parameters you can control, refer to the MIDI implementation.

   note *MIDI control of effects can be used regardless of the Control Change on/off setting.*

2. **Program Change**
   Here you can turn program change message reception/transmission on (highlighted) or off.
   When you switch scenes, the D32XD/D16XD will transmit a corresponding program change message. These program change messages can be recorded on an external

MIDI sequencer, and re-transmitted back to the D32XD/D16XD to select the corresponding scene.

*These messages will be received only if Automation (→p.104, [*108]) is turned off.*

3. **Global Ch** **[01…16]**
   This sets the Global MIDI Channel.
   If you want to use program change messages to transmit and receive scene changes, use a MIDI cable to connect your external MIDI device to the D32XD/D16XD, and set the MIDI channel of your connected device to the same MIDI channel as the D32XD/D16XD's **"Global Ch"** so that MIDI messages can be transmitted and received.

4. **MMC Device ID** **[000…127]**
   Specifies the device ID that will be used to transmit and receive MMC.
   In order to transmit or receive MMC, you must use a MIDI cable to connect the D32XD/D16XD and the external MIDI device, set the two devices to the same Device ID, and make the appropriate setting in **"MMC Mode."**

   note *If this is set to 127, the D32XD/D16XD can transmit and receive MMC commands to and from units of any device ID setting.*

5. **Mode** **[Transmit, Receive, Off]**
   This sets the MMC transmission/reception mode.
   Transmit: MMC will be transmitted. In this case, the MIDI Sync setting will automatically be set to MTC Slave.
   Receive: MMC will be received. In this case, the MIDI Sync setting will automatically be set to MTC Master.
   Off: MMC will not be used.

6. **Frame Rate**
   This selects the frame rate that is used when **MIDI Sync** is set to **"MTC Master"** or **"MTC Slave."**
   Set this to the same frame rate as used on the external device with which you are synchronizing.
   30: 30 fps (30 frames per second, non-drop)
   29NDF: 29.97 fps (29 frames per second, non-drop)
   29DF: 29.97 fps (29 frames per second, drop)
   25: 25 fps (25 frames per second, non-drop)
   24: 24 fps (24 frames per second, non-drop)

7. **Time Code Offset**
   [00:00:00.00F…23:59:59.27F] (for frame rate 30)
   This specifies an offset value that will be reflected in the counter.
   The offset value you specify here will be the starting value for the counter. This will apply when the counter is set to display frames and MTC/MMC is enabled.

8. **MIDI Sync**
   [MIDIClockMaster, Off, MTC Master, MTC Slave]
   This selects the synchronization mode used when synchronizing via the MIDI IN/OUT connectors.
   MIDIClock Master: MIDI clock data will be transmitted.
   Off: Synchronization messages will not be transmitted or received.
   MTC Master: The D32XD/D16XD will operate as the master device. At this time if the MMC Mode is set to **Transmit**, the Mode setting will automatically be turned **Off**.
   MTC Slave: The D32XD/D16XD will operate as the slave device. At this time if the MMC Mode is set to **Receive**, the Mode setting will automatically be turned **Off**.

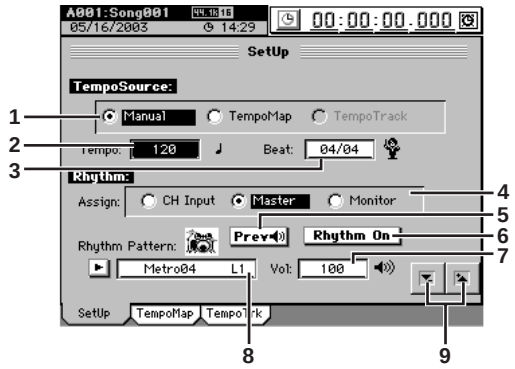
9. **Chase Mode** **[ON, OFF]**
   This is available if **"MIDI Sync"** is set to **"MTC Slave."**
   ON: When MTC synchronization begins, playback will chase the MTC messages. After playback begins, if two seconds or more elapse without a MTC message being received, and there is a discrepancy of two seconds or more between the MTC messages and the current location of the D32XD/D16XD, playback will stop and wait for MTC synchronization to resume.
   OFF: MTC messages will be chased during playback only when MTC synchronization begins. Once playback begins, it will continue even if the received time code no longer matches the internal time code or if time code stops arriving.

If you are synchronizing with a device other than the D32XD/D16XD as the MTC master, incompatibilities between the devices may cause synchronization problems unless you play back from the beginning of the song.

8. TEMPO

Here you can make settings for the tempo, time signature, and rhythm (metronome) of the song.
If the counter is displaying "MBT" (measure, beat, 1/96th beat), the counter (→p.96) will operate according to the specified tempo.

8-1. SetUp



1. **TempoSource** **[Manual, TempoMap, TempoTrack]**
Specifies the tempo source.

   Manual
   The current **"Tempo"** and **"Beat"** settings will be used. It will not be possible to automatically change the tempo, time signature, and rhythm pattern during the song.

   TempoMap
   The tempo, time signature, and rhythm pattern will change automatically during the song, according to the tempo maps you create. Use the **"TempoMap"** tab page to create tempo maps.

   *If you want to add or edit tempo map events in the "**TempoMap**" tab page, select "**TempoMap**" as the tempo source.*

   TempoTrack
   The tempo will be determined by the recorded tap tempo or MIDI clock. Use the **"TempoTrack"** tab page to record tap tempo or sequencer tempo, and then select **"TempoTrack"** here.
   The time signature will follow the settings you created in the **"TempoMap"** tab page. (→p.135)

   *"**TempoTrack**" can be selected after the data is created.*

   *If you create a tempo track in the "**TempoTrack**" tab page, the tempo source will automatically be switched to "**Tempo Track.**"*

2. **Tempo** **[40…240, (***)]**
Specifies the tempo when **"TempoSource"** is set to **"Manual."**
If TempoSource is set to **"TempoMap,"** this area will indicate the tempo for the current time location as specified by the tempo maps you created in the **"TempoMap"** tab page. If **"TempoSource"** is set to **"TempoTrack,"** this area will indicate **"***."**
The range is ♩=40–240.

3. **Beat** **[1/4…16/16)]**
Specifies the time signature when **"TempoSource"** is set to **"Manual."**
If TempoSource is set to **"TempoMap"** or **"TempoTrack,"** this area will indicate the time signature for the current time location as specified by the tempo maps you created in the "**TempoMap**" tab page.

4. **Assign** **[CH Input, Master, Monitor]**
Here you can assign the output of the rhythm.

   CH Input:
   Outputs the rhythm as a channel input source.

   Master:
   Outputs the rhythm to the master bus.

   Monitor:
   Outputs the rhythm to the monitor bus.

   *If you select **"CH Input,"** use the **"Ch Assign"** tab page (→p.100) to assign the rhythm to the desired channel.*

5. **Prev**
Turn this on (highlighted) if you want to preview the rhythm.
This is valid only in this tab page; it will automatically be switched off if you play back the recorder or move to another page.

6. **Rhythm On**
Turn this on (highlighted) if you want to play the rhythm.

7. **Vol** **[000…100]**
Adjusts the volume of the rhythm.

8. **Rhythm Pattern**
When **TempoSource** is set to **"Manual,"** press the popup button to open the **Rhythm Pattern** dialog box, select a rhythm from the list, and press the **OK** button. You can also make your selection by selecting (highlighted) the **Rhythm Pattern** cell and using the **value dial** (or the **+/–** keys).
The rhythms you can select will depend on the **"Beat"** (→p.185).
In the case of **"TempoMap"** or **"TempoTrack,"** this will show the rhythm for the current location created in the **"TempoMap"** tab page.

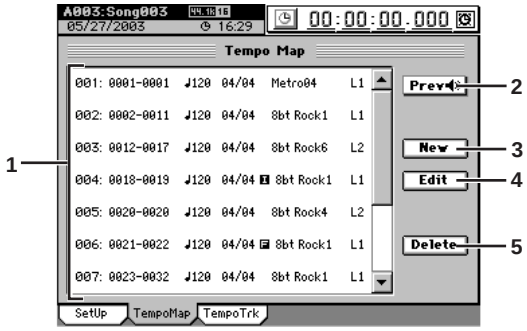
   In the case of a 96 kHz song, you will be able to select only Metro, Hihat, and Blank.

9. **▼ / ▲ buttons**
Use these up/down buttons to edit the parameter values.

8-2. Tempo Map

You can set the tempo map to automatically change the tempo, time signature, and rhythm pattern during recording or playback.
Here you can also create an original tempo map.

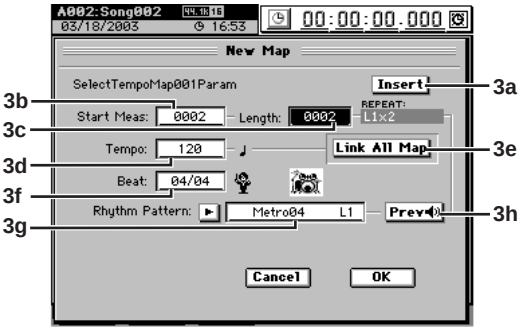
Tempo map data is specified in units of one measure.



1. Tempo map window **[001…200]**
Here you can select a tempo map event.
This area shows the tempo map event number, starting measure, ending measure, tempo, time signature, rhythm pattern name, and the number of measures in the pattern.

2. Prev
Turn this on (highlighted) if you want to preview the rhythm that is selected in the tempo map window.
This setting is valid only in this page, and will automatically be switched off when you play back the recorder or move to another page.

3. New
Creates a new tempo map event.
To add a new tempo map event, press this button.
The **New Map** dialog box will appear.



3a. Insert **[On, Off]**
If this is on (highlighted), tempo map event editing will occur in Insert mode, and the tempo map event you edit will be inserted.
If this is off, tempo map editing will occur in Overwrite mode, and your edits will overwrite the existing tempo map event.

3b. Start Meas **[0001…9999]**
Specifies the location at which the tempo map event will be created (begun, inserted, overwritten), in units of measures.

3c. Length **[0001…9999]**
Specifies the number of measures for the tempo map event. Beside this is displayed the number of measures in the pattern, and the number of repeats.

3d. Tempo **[40…240]**
Specifies the tempo in a range of ♩=40–240.

3e. Link All Map
If this is on, the tempo of all tempo map events will be edited simultaneously.

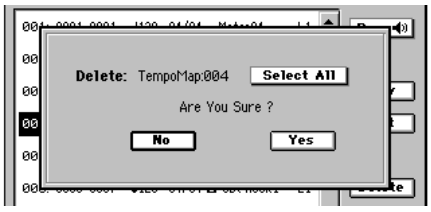
3f. Beat **[01/04…16/16]**
Specifies the time signature.

3g. Rhythm Pattern
Specifies the rhythm
Press the popup button to display the **Rhythm Pattern** dialog box, select a rhythm from the list, and press the **OK** button. Alternatively, you can select (highlight) the **Rhythm Pattern** cell and use the value dial (or the **+/–** keys) to make a selection.
The rhythms that you can select will depend on the **"Beat"** (→p.185). If you want to create a period of silence, choose a rhythm (such as 001 Blank 04) that contains silence.

3h. Prev
Turn this on if you want to preview the rhythm.

4. Edit
Edits the settings of a tempo map event.
Select this if you want to modify an existing tempo map event. Select (highlight) the tempo map event you want to modify, and press this button to display the **Edit Map** dialog box where you can edit the parameters. (See the preceding section, 3. New)

5. Delete
Deletes a tempo map event.
In the tempo map window, select the tempo map event you want to delete and press this button to open the **Delete** dialog box.



Press the **Yes** button to delete the tempo map event. If you decide not to delete it, press the **No** button.
When you execute this operation, the selected tempo map event will be deleted, and subsequent tempo map events will be moved forward.
If you want to delete all tempo map events in a single operation, turn the **Select All** button on (highlighted). The tempo map event number will be displayed as "***".

8-3. Tempo Track

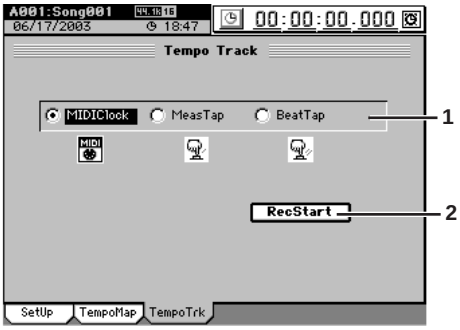
Here you can record the tempo track. You can do this in one of two ways.

- Recording MIDI clock messages
  You can synchronize to an external MIDI sequencer by recording the MIDI Clock messages received from the external MIDI sequencer so that this data will determine the tempo of the song.
- Recording tap tempo
  You can specify the tempo by tapping (either the **PLAY** key or a foot switch) while the song plays back. If you use this method to specify the tempo of a song whose tempo is unknown (such as a song recorded from a CD), you will then be able to edit the tracks in units of measures.

For the recording procedure refer to "Tempo track" (→p.63).

The above two methods of recording the tempo track store their data in the same area; only the last-recorded data is maintained. It is not possible to have two tempo tracks of data.

If the memory becomes full while recording tempo data, recording will end automatically.



1. **Tempo Track** **[MIDIClock, MeasTap, BeatTap]**
   Selects the type of tempo track to be recorded.

   MIDIClock:
   The tempo track will be created by recording MIDI clock data from a song created on an external sequencer.

   MeasTap:
   The tempo track will be created by tapping at the beginning of each measure.

   BeatTap:
   The tempo track will be created by tapping at the beginning of each beat.

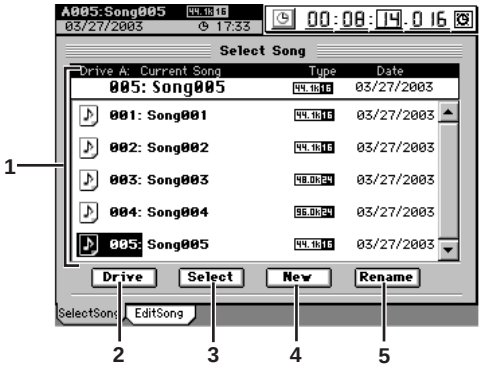
2. **RecStart**
   This button displays the record-ready dialog box.
   If you are recording MIDI clock messages, recording will begin when the D32XD/D16XD receives MIDI clock messages from your external MIDI sequencer.
   If you are recording tap tempo, press the **PLAY** key or the foot switch. Tap tempo will be recorded according to the intervals at which you press the key or foot switch.

   note *The tempo will be recorded from the beginning of the song.*

   note *The tempo at the measure or beat where you stop tempo recording will be automatically copied all the way to the end of the song.*

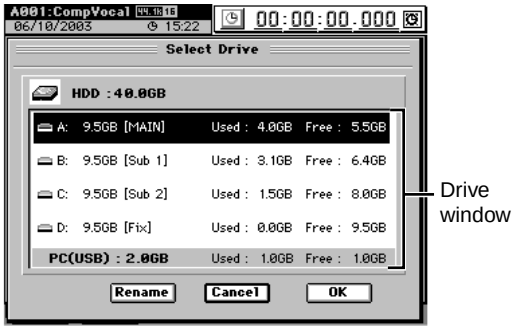
9. SONG

9-1. Select Song



1. **Select Song window**
   Here you can select a song. When you select a song, the song name will be highlighted. The top line shows the song to which your recording, playback, and editing operations will apply (i.e., the "current song"). The EDIT symbol will appear when you record or edit the song. When you save the recorded or edited content, the EDIT symbol will disappear (→p.42).
   The display shows the song number:, song name, sampling frequency, bit depth, protect setting, and date the song was last modified.
   If you want to select songs from another drive, press the **Drive** button and select a drive.

2. **Drive** **[I, A…D]**
   Here you can choose the current drive. When you press this button, the **Select Drive** dialog box will appear.


A001:CompVocal
06/10/2003
15:22
00:00:00.000
Select Drive
HDD : 40.0GB
A: 9.5GB [MAIN] Used : 4.0GB Free : 5.5GB
B: 9.5GB [Sub 1] Used : 3.1GB Free : 6.4GB
C: 9.5GB [Sub 2] Used : 1.5GB Free : 8.0GB
D: 9.5GB [Fix] Used : 0.0GB Free : 9.5GB
PC(USB) : 2.0GB Used : 1.0GB Free : 1.0GB
Rename
Cancel
OK
Drive window

   In the drive window, press a drive name to select it. Press the **OK** button to confirm your selection. If you decide not to change drives, press the **Cancel** button.

   If you want to rename the song drive, press the **Rename** button to display the **Rename** dialog box, and edit the song drive name. You can input a name of up to sixteen characters. (→p.97)

3. **Select**
   Press this button to load the song you highlighted in the song list (i.e., to make it the current song).

4. **New**
   Press this button to create a new song in the currently selected drive. The new song will be created following the last song in the current drive.
   The **New Song** dialog box will appear when you press this button. Use the radio buttons to specify the sampling frequency and bit depth for the new song, and press the **OK** button.

4a. Song Type
[44.1 kHz/16 bit, 48 kHz/16 bit, 44.1 kHz/24 bit, 48 kHz/24 bit, 96 kHz/24 bit]

Specify the sampling frequency and bit depth for the newly created song.
The type you select will determine the minimum of tracks that can be simultaneously recorded, played, or punch-recorded.

Maximum number of simultaneous tracks by Song Type

Song Type	Recording	Playback	Punch recording
44.1 kHz/16-bit	16	32 [*16]	8
48 kHz/16-bit			
44.1 kHz/24-bit	8	16	4
48 kHz/24-bit			
96 kHz/24-bit	4	8	2

*You can change the **"Song Type"** (sampling frequency/bit depth) only when creating a new song.*

It is not possible to continuously record for more than 12 hours (more than 6 hours at 96 kHz).

5. Rename
This lets you edit the song name that is highlighted in the song select window. Press the button to display the **Rename** dialog box, and edit the song name. You can input a name of up to sixteen characters. (→p.97)

9-2. Edit Song

You can use these operations to edit the current song.

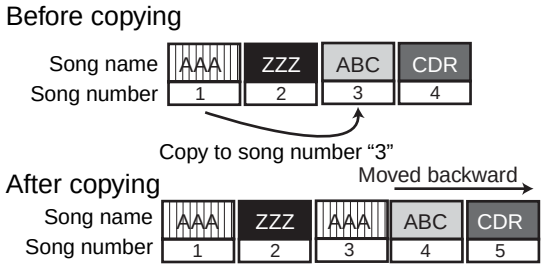
1. Song cell
Information about the current song is displayed here. The display shows the drive name, song number: song name, sampling frequency, bit depth, protect setting, and date of last modification.

2. Copy
This operation copies the current song to another song number in the drive you specify.
When you press this button, the **Copy Song** dialog box will appear.

Press the **Yes** button to execute the copy, or press the **No** button to cancel. When the copy operation is finished and the display indicates **"Completed,"** press the **OK** button.

This Copy operation cannot be undone.

2a. Copy-destination song number cell
This shows the copy-destination drive, and lets you select the song number. You can select a number in the range of "001" through "existing song numbers + 1". When you execute the copy, the song will be copied to the copy-destination song number. If the copy-destination is an existing song number, it will not be overwritten; that song and subsequent songs will be renumbered upward by one as shown in the diagram below.

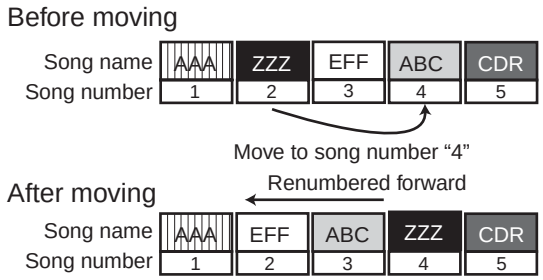


2b. Copy-destination drive
If you want to copy the song to a song drive other than the current drive, press this button to open the **Select Drive** dialog box. Select the desired drive and press the **OK** button.

3. Move
This operation moves the selected song to another song number of the drive you specify.
When you press this button, the **Move Song** dialog box will appear. Press the **Yes** button to execute the move, or press the **No** button to cancel. When the move operation is finished and the display indicates **"Completed,"** press the **OK** button.

This Move operation cannot be undone.

3a. Move-destination song number cell
This shows the current drive, and lets you select the song number.
If you are moving a song within the current drive, you can choose from the existing song numbers. If you are moving a song between different song drives, you can select a number in the range of "001" through "existing song numbers + 1".
When you execute the move, no data will be overwritten. If the move-destination number you selected is higher than the move-source number, preceding song numbers will be renumbered forward. If the move-destination number is lower than the move-source number, subsequent song numbers will be renumbered down by one.



3b. Move-destination drive

If you want to move the song to a drive other than the drive shown in the song cell, press this button to open the **Select Drive** dialog box. Select the drive and press the **OK** button.

When you move a song from another drive, song numbers will be adjusted in the same way as for the Copy operation.

4. Delete

This operation deletes the current song.

When you press this button the **Delete Song** dialog box will appear. Press the **Yes** button to delete the song, or press the **No** button to cancel.

When you execute this operation, the selected song will be deleted and subsequent songs will be renumbered forward.

When the song has been deleted and the display indicates **"Completed,"** press the **OK** button.

This Delete operation cannot be undone.

5. Protect

Writing, deletion, or editing of the current song can be prohibited (protect on) or allowed (protect off).

When protect is on, it will not be possible to rewrite the parameters or data of that song; e.g., an error message will appear if you attempt to record.

The song will automatically be saved when you turn this protect setting on.

When you press this button, the **Protect** dialog box will appear. Press the **ON** button to turn protect on, or press the **OFF** button to turn protect off. When the protect setting has been applied and the display indicates **"Completed,"** press the **OK** button.

When protect is on, a protect symbol (🔒) will appear following the sampling frequency indication of the song.

If protect is on, adjustments to the faders or EQ will be reflected during editing, but will not be recorded.

6. Save Now

This operation immediately saves the current song in its present state. Press the **Yes** button to execute the save, or press the **No** button to cancel.

When the song has been saved and the display indicates **"Completed,"** press the **OK** button.

Since the D32XD/D16XD automatically saves song data and parameters when you shut down the power or when you select a song, it is not absolutely necessary that you perform this operation in order to save data.

However if the power should be interrupted by a power failure or other accident, the data that has been recorded or edited since the most recent power-on (or since a song was selected) will be lost.

We recommend that you use this command to save the data periodically after recording or editing for an extended period, or if you are using the D32XD/D16XD in an environment where the power supply is unreliable.

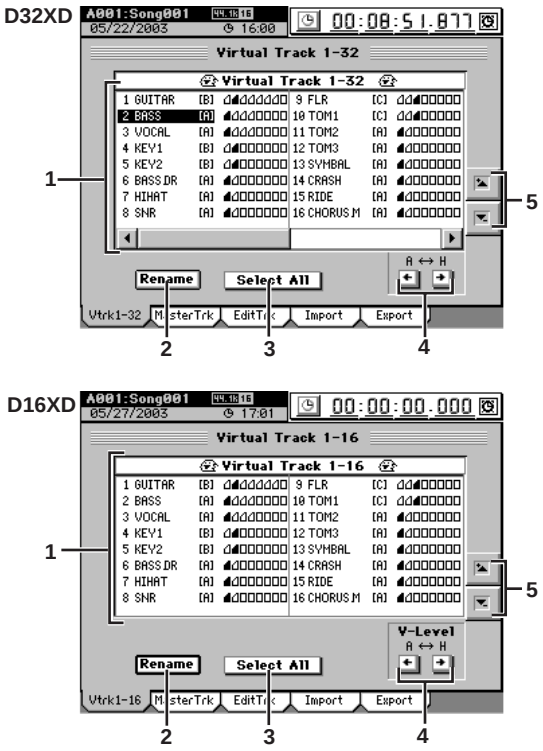
note *The song is saved when the following operations occur.*

- *When you select the current song*
- *When you execute the Protect Song operation*
- *When you execute Save Now*
- *When you shut down*

10. TRACK

10-1. Virtual Track 1–32 [*1–16]

Here you can select a virtual track for each channel track.



1. Virtual track selection

Select a track **"1"–"32 [*16],"** and specify a virtual track for each track.

Each track has eight virtual tracks; **"A"–"H."** Recording or playback operations will be performed using the virtual track you select here.

Audio events	Virtual track	
	Active	Ready
Audio exists	■	□
No audio exists	■	□

2. Rename

This button lets you edit a track name.

Select the track that you want to rename, press this button to display the **Rename** dialog box, and edit the name. You can input a name of up to sixteen characters. (→p.97)

3. Select All **[On, Off]**

If you want to select the same virtual track number for every track (tracks 1–32 [*16]), turn this button on (highlighted) and then select the desired virtual track.

The same virtual track number will be selected for all tracks.

4. V-Level **[A…H]**

Here you can select one of the eight virtual tracks **"A"–"H."**

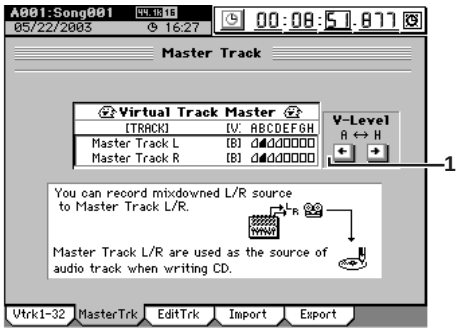
For virtual tracks that contain data, one corner of the icon will be folded down.

5. ▼ / ▲ buttons

Use these up/down buttons to select a track.

10-2. Master Track

Here you can select a virtual track for the master track. This track will be used as the mixdown-destination track. This is also the track that will be used when creating an audio CD.



1. V-Level [A…H]

Here you can select one of the eight virtual tracks **"A"–"H."**

For virtual tracks that contain data, one corner of the icon will be folded down.

Recording or playback operations will be performed using the virtual track you select here.

10-3. Edit Track

Here you can edit tracks.

Editing operations will apply to the currently selected tracks 1–16.

The other virtual tracks (i.e., the virtual tracks that are not selected) will not be affected by your editing. (However, "CopyWholeTrk" and "SwapWholeTrk" are exceptions to this.)

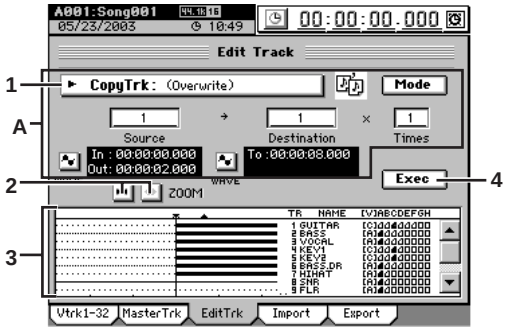
Some of these editing operations will consume additional space on the drive, but there are ways in which you can increase the available free space (→p.142).

The locations stored in the **LOC1/IN** through **LOC4/END** keys determine the region(s) that will be edited (→p.38).

LOC1/IN key: IN location
LOC2/OUT key: OUT location
LOC3/TO key: TO location
LOC4/END key: END location

note *After executing one of these editing operations, you can use the Undo operation to cancel the results.*

You cannot make settings that would cause the IN–OUT region or the TO–END region to be longer than 12 hours (for 96 kHz, longer than 6 hours).



1. Edit type
[CopyTrk, InsertTrk, EraseTrk, DeleteTrk, SwapTrk, ReverseTrk, OptimizeTrk, ExpCmpTrk, CopyWholeTrk, SwapWholeTrk, Fade Trk, NormalizeTrk]

When you press this button, the **Edit Trk Type** dialog box will appear. Select the desired editing operation and press the **OK** button to return to the **"EditTrk"** tab page.

The screen display of area "A" will change depending on the edit type you select here.

2. ZOOM buttons

Use these buttons to expand or shrink the area displayed in the track view window.

3. Track view window

Audio events in the track are displayed as bold lines.

The vertical line is the current location.

Locate points (→p.38) are shown in the upper part of this area.

IN: ▼ OUT: ▲ TO: ▽ END: △

At the right are displayed the name of each track and the virtual track usage status.

4. Exec.

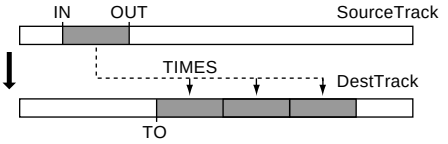
When you press this button, a dialog box will appear, allowing you to confirm the editing operation you have specified. Press the **Yes** button to execute, or press the **No** button to cancel.

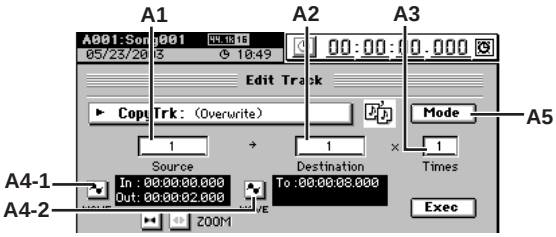
○ Separate explanations are given below for each editing operation you select in 1. Edit Type.

CopyTrk

This operation copies the audio data in the IN–OUT range of the copy source track (**Source**) to the TO location of the copy destination track (**Destination**), repeating the specified number of times.

You can use the clipboard to copy data to a track of a different song.





A1. Source D32XD **[1...32, ML, MR, 1-2...31-32, MST, 1-4...29-32, 1-8...24-32, 1-16, 17-32, 1-32, ALL, Clip#*1]**

D16XD **[1...16, ML, MR, 1-2...15-16, MST, 1-4...13-16, 1-8...9-16, 1-16, ALL, Clip#*1]**

Select the copy source track.

ML and **MR** are master track L and R, **MST** is the master track, and **ALL** is tracks 1–16 and the master track.

*1: You can select **"Clip#"** only if the clipboard contains data. # indicates the number of tracks in the clipboard. You can use **"Clip#"** to copy from a track of a different song.

For a 96 kHz/24-bit song, you can choose only up to tracks 1–8.

For D32XD 48 kHz/24-bit or 44.1 kHz/24-bit songs, only tracks 1-16 can be selected.

A2. Destination D32XD **[1...32, ML, MR, 1-2...31-32, MST, 1-4...29-32, 1-8...24-32, 1-16, 17-32, 1-32, ALL, Clip]**

D16XD **[1...16, ML, MR, 1-2...15-16, MST, 1-4...13-16, 1-8...9-16, 1-16, ALL, Clip]**

Select the copy destination track.

For a 96 kHz/24-bit song, you can choose only up to tracks 1–8.

For D32XD 48 kHz/24-bit or 44.1 kHz/24-bit songs, only tracks 1-16 can be selected.

Using Clip

You can use the clipboard to copy data to a track of a different song.

If you copy between songs that have a different sampling frequency and/or bit depth, the **CopyTrk** dialog box will appear, and the sampling frequency and/or bit depth will be converted. If the song has a different sampling frequency, conversion will be performed; this will take a certain amount of time.

2a. Dither

If you turn this button on, dithering will be performed on the data when the operation is executed. This will minimize the quantization noise that may occur when 24-bit data is converted to 16-bit data.

A3. Times **[1…99]**

Specifies the number of times that the data will be copied.

A4-1. Wave

A4-2. Wave

You can press these buttons to view the waveform of the track audio.

This allows you to set the editing locations (IN, OUT, TO, END) more accurately.

Press the A4-1 button if you want to edit IN and OUT, or press the A4-2 button if you want to edit TO and END.

note *You will find it convenient to set IN (LOC1), OUT (LOC2), TO (LOC3), and END (LOC4) to their approximate locations before you use this function.*

A5. Mode

When you press this button, the **Copy Mode** dialog box will appear. Select the desired mode and press the **OK** button.

OverWrite:

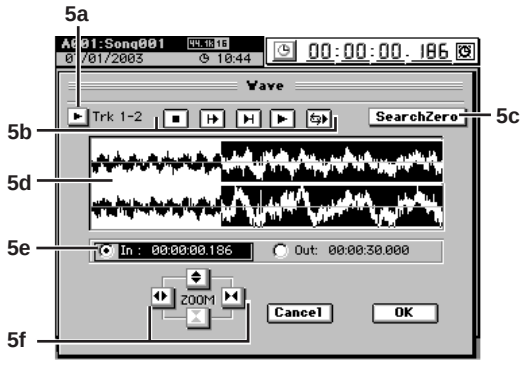
Track data previously at the copy-destination will be overwritten.

Insert:

The copied data will be inserted, and subsequent track data will be shifted toward the end of the song.

Wave dialog box

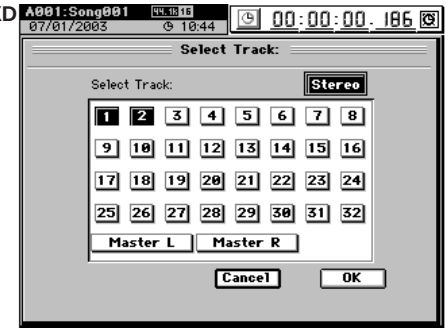
To open this dialog box, press the **Source Wave** button if you are setting the **"Source"** region, or press the Destination **Wave** button if you are setting the **"Destination"** region.



5a. Track selection

Press the popup button, press a radio button in the **Select Track** dialog box to select the track whose location you want to specify, and press the **OK** button.
If you press (highlight) the **Stereo** button, the waveforms of two adjacent channels will be displayed in the upper and lower parts of the waveform window.

D32XD



D16XD

5b. Preview playback buttons

- ■ stops playback
- ▷| plays approximately two seconds from the location ("Play From")
- |◁ plays approximately two seconds ending at the location ("Play To")
- ▶ plays the location (from In to Out)
- ⟲ plays as a loop

5c. Search Zero

You can press this button and turn the value dial to move to the next or previous zero-cross point.

note *A "zero cross" point is a point where the waveform level crosses the ±0 amplitude (the center line in the waveform window).*

5d. Waveform window

This displays the waveform of the selected track.

5e. Locate

Use the radio buttons to select the location (IN, OUT, TO, END) you want to edit, and turn the value dial to set the location while you listen to the track audio (soloed). The current location is shown by the vertical bar in the waveform window.

5f. ZOOM

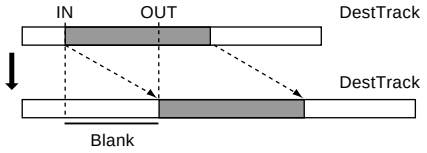
Use these buttons to adjust the size of the waveform display and the playback speed.

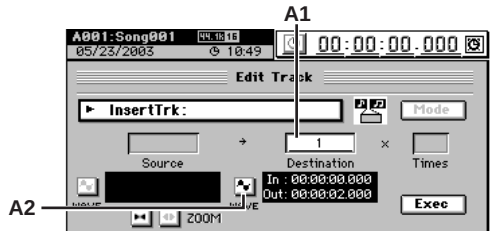
- ↕ vertically expands the waveform display.
- ⇕ vertically shrinks the waveform display.
- ↔ horizontally expands the waveform display.
- ⇔ horizontally shrinks the waveform display.

When you press the **OK** button, the locations you specified will be overwritten to the corresponding key (**LOC1/IN**, **LOC2/OUT**, **LOC3/TO**, **LOC4/END**). If you press the **Cancel** button, your changes will be discarded.

InsertTrk

This operation inserts a blank in the IN–OUT range of the insert destination track (**Destination**).
When this is executed (**Exec.**), any track data that followed the inserted blank will be shifted toward the end of the song.





A1. Destination D32XD **[1...32, ML, MR, 1-2...31-32, MST, 1-4...29-32, 1-8...24-32, 1-16, 17-32, 1-32, ALL]**

D16XD **[1...16, ML, MR, 1-2...15-16, MST, 1-4...13-16, 1-8...9-16, 1-16, ALL]**

Select the insert destination track.

For a 96 kHz/24-bit song, you can choose only up to tracks 1–8.

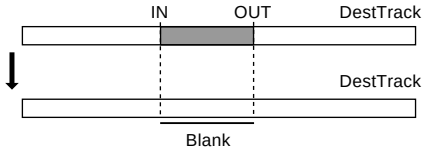
For D32XD 48 kHz/24-bit or 44.1 kHz/24-bit songs, only tracks 1-16 can be selected.

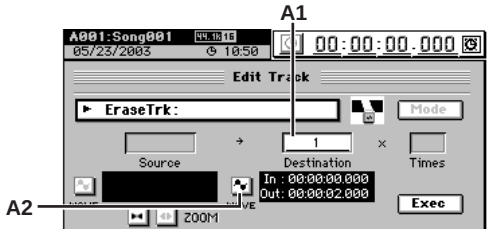
A2. Wave

This area displays the audio data of the track as a waveform. Here you can set the editing locations (IN, OUT) more precisely. (→p.139 Edit Type: "CopyTrk," Wave dialog box)

EraseTrk

This operation erases the track data in the IN–OUT range of the erase destination track (**Destination**).
When this is executed (**Exec.**), the IN–OUT range will contain silence.





A1. Destination D32XD **[1...32, ML, MR, 1-2...31-32, MST, 1-4...29-32, 1-8...24-32, 1-16, 17-32, 1-32, ALL]**

D16XD **[1...16, ML, MR, 1-2...15-16, MST, 1-4...13-16, 1-8...9-16, 1-16, ALL]**

Select the erase destination track.

For a 96 kHz/24-bit song, you can choose only up to tracks 1–8.

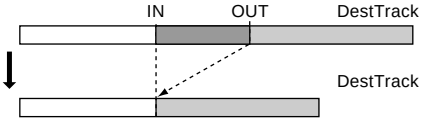
For D32XD 48 kHz/24-bit or 44.1 kHz/24-bit songs, only tracks 1-16 can be selected.

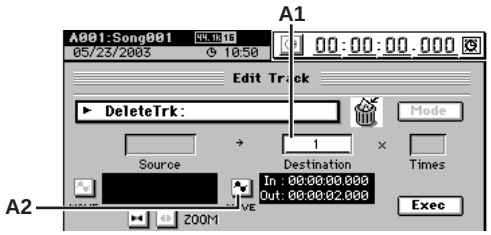
A2. Wave

This displays the audio data of the track as a waveform. Here you can set the editing locations (IN, OUT) more precisely. (→p.139 Edit Type: "CopyTrk," Wave dialog box)

DeleteTrk

This operation deletes the track data from the IN–OUT range of the delete destination track (**Destination**).
When this is executed (**Exec.**), the data of the IN–OUT range will be discarded, and any track data that followed the deleted range will be shifted toward the beginning of the song.





A1. Destination D32XD **[1...32, ML, MR, 1-2...31-32, MST, 1-4...29-32, 1-8...24-32, 1-16, 17-32, 1-32, ALL]**

D16XD **[1...16, ML, MR, 1-2...15-16, MST, 1-4...13-16, 1-8...9-16, 1-16, ALL]**

Select the track(s) from which data will be deleted.

For a 96 kHz/24-bit song, you can choose only up to tracks 1–8.

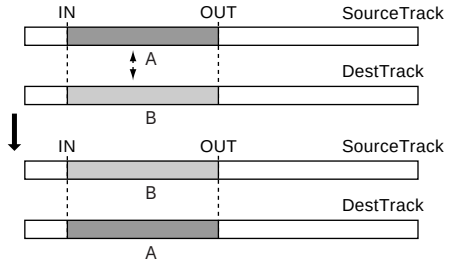
For D32XD 48 kHz/24-bit or 44.1 kHz/24-bit songs, only tracks 1-16 can be selected.

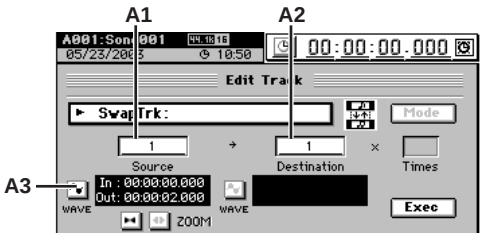
A2. Wave

This displays the audio data of the track as a waveform. Here you can set the editing locations (IN, OUT) more precisely. (→p.139 Edit Type: "CopyTrk," Wave dialog box)

SwapTrk

This operation exchanges (swaps) the track data of the IN–OUT range of the swap source track (**Source**) with the track data in the IN–OUT range of the swap destination track (**Destination**).
When this is executed (**Exec.**), the data in the IN–OUT ranges of the **"Source"** and **"Destination"** will be exchanged.





A1. Source D32XD **[1...32, ML, MR, 1-2...31-32, MST, 1-4...29-32, 1-8...24-32, 1-16, 17-32, 1-32, ALL]**

D16XD **[1...16, ML, MR, 1-2...15-16, MST, 1-4...13-16, 1-8...9-16, 1-16, ALL]**

Select the swap source track.

For a 96 kHz/24-bit song, you can choose only up to tracks 1–8.

For D32XD 48 kHz/24-bit or 44.1 kHz/24-bit songs, only tracks 1-16 can be selected.

A2. Destination D32XD **[1...32, ML, MR, 1-2...31-32, MST, 1-4...29-32, 1-8...24-32, 1-16, 17-32, 1-32, ALL]**

D16XD **[1...16, ML, MR, 1-2...15-16, MST, 1-4...13-16, 1-8...9-16, 1-16, ALL]**

Select the swap destination track.

For a 96 kHz/24-bit song, you can choose only up to tracks 1–8.

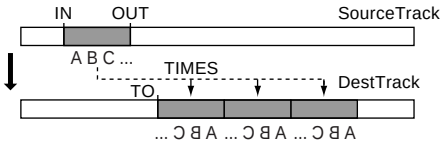
For D32XD 48 kHz/24-bit or 44.1 kHz/24-bit songs, only tracks 1-16 can be selected.

A3. Wave

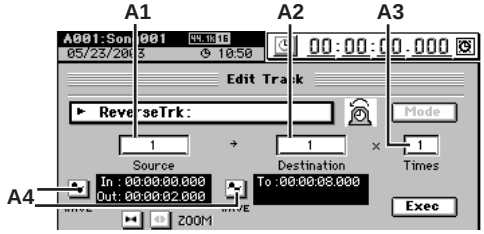
This displays the waveform of the track audio, allowing you to set the editing locations (IN, OUT) more accurately. (→p.139 Edit Type: "CopyTrk," Wave dialog box)

ReverseTrk

This operation copies the track data of the IN–OUT range of the reverse source track (**Source**) to the TO location of the destination track (**Destination**) in reverse (flipped back-to-front). You can specify the number of times that the data will be copied.
When this is executed (**Exec.**), the copied data will be reversed, so that the playback will be backward.



The specified range of the reverse destination track will be overwritten.



A1. Source D32XD **[1...32, ML, MR, 1-2...31-32, MST, 1-4...29-32, 1-8...24-32, 1-16, 17-32, 1-32, ALL]**

D16XD **[1...16, ML, MR, 1-2...15-16, MST, 1-4...13-16, 1-8...9-16, 1-16, ALL]**

Select the reverse source track.

For a 96 kHz/24-bit song, you can choose only up to tracks 1–8.

For D32XD 48 kHz/24-bit or 44.1 kHz/24-bit songs, only tracks 1-16 can be selected.

A2. Destination D32XD **[1...32, ML, MR, 1-2...31-32, MST, 1-4...29-32, 1-8...24-32, 1-16, 17-32, 1-32, ALL]**

D16XD **[1...16, ML, MR, 1-2...15-16, MST, 1-4...13-16, 1-8...9-16, 1-16, ALL]**

Select the reverse copy destination track.

For a 96 kHz/24-bit song, you can choose only up to tracks 1–8.

For D32XD 48 kHz/24-bit or 44.1 kHz/24-bit songs, only tracks 1-16 can be selected.

A3. Times **[1…99]**

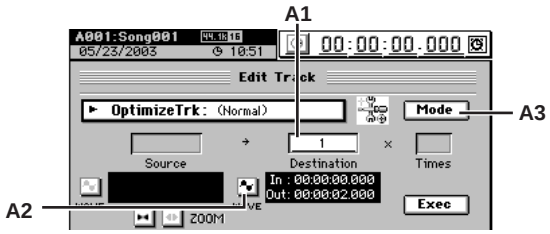
Specify the number of times that the data will be copied.

A4. Wave

This displays the audio data of the track as a waveform. Here you can set the editing locations (IN, OUT, TO, END) more precisely. (→p.139 Edit Type: "CopyTrk," Wave dialog box)

OptimizeTrk

Optimizes the track data in the IN–OUT region of the optimize-destination track (**Destination**).



A1. Destination D32XD **[1...32, ML, MR, 1-2...31-32, MST, 1-4...29-32, 1-8...24-32, 1-16, 17-32, 1-32, ALL]**

D16XD **[1...16, ML, MR, 1-2...15-16, MST, 1-4...13-16, 1-8...9-16, 1-16, ALL]**

Selects the track that will be optimized.

For a 96 kHz/24-bit song, you can choose only up to tracks 1–8.

For D32XD 48 kHz/24-bit or 44.1 kHz/24-bit songs, only tracks 1-16 can be selected.

A2. Wave

This displays the audio data of the track as a waveform. Here you can set the editing locations (IN, OUT) more precisely. (→p.139 Edit Type: "CopyTrk," Wave dialog box)

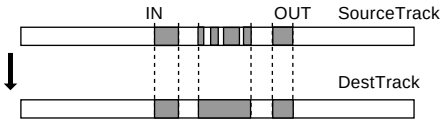
A3. Mode **[Normal, Erase Silence, Erase Punch Noise]**

Selects the type of optimization that will be performed.

Normal

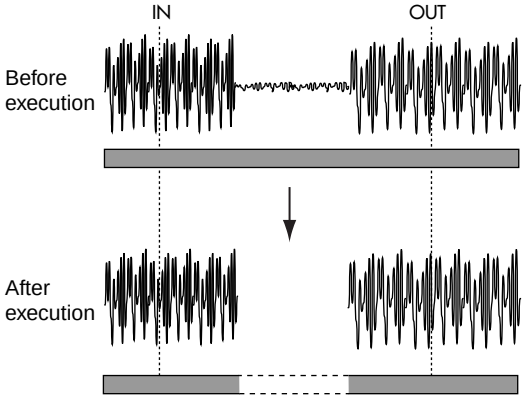
This operation re-creates the audio events in the IN–OUT region to prevent **"Disk too busy."** errors from occurring. If there are no gaps between one audio event and the next, or if the gap is small, the data will be combined into a single event. If there are extended gaps between audio events, the data will be re-created in a way that avoids wasting space.

note *By setting the IN–OUT region to the beginning and end of the song, and executing the Optimize Track operation, you can re-create the data in a form that will be ideal for hard disk access.*



Erase Silence

In an extended recording that contains significant amounts of silence, this operation erases the silent regions, and divides the areas containing sound into separate events.

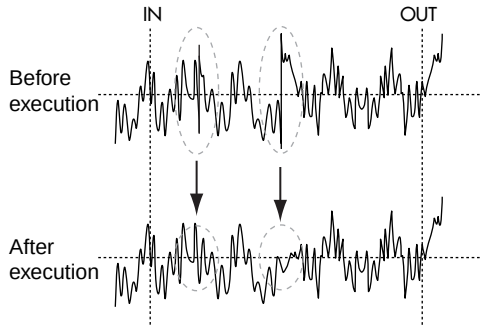


note *Levels lower than –36 dB will be considered as silence.*

Erase Punch Noise

This minimizes "pop" noises. Set the IN and OUT locations before and after the area where the noise occurs. You can also erase multiple occurrences of noise.

The **"Sens"** value specifies the sensitivity at which noise will be detected. Normally, you should start by executing this command with a setting of **"1"**. Increase the setting if noise still remains.

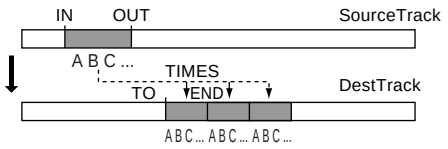


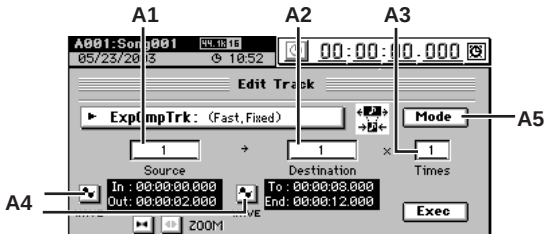
ExpCmpTrk

This operation expands or compresses the track data of the IN–OUT range of the expansion/compression source track (**Source**), places it in the TO–END range of the expansion/compression destination track (**Destination**), and copies it the specified number of times beginning at the TO location.

*When this is executed (**Exec.**), the expansion/compression destination track will be overwritten.*

The available ratio of expansion/compression is limited, and if the IN–OUT duration is drastically different than the TO–END duration, an error message will appear when this is executed. In general, the TO–END time can be changed to 50–200% of the IN–OUT time.





A1. Source D32XD **[1...32, ML, MR, 1-2...31-32, MST]**

D16XD **[1...16, ML, MR, 1-2...15-16, MST]**

Select the expansion/compression source track.

For a 96 kHz/24-bit song, you can choose only up to tracks 1–8.

For D32XD 48 kHz/24-bit or 44.1 kHz/24-bit songs, only tracks 1-16 can be selected.

A2. Destination D32XD **[1...32, ML, MR, 1-2...31-32, MST]**

D16XD **[1...16, ML, MR, 1-2...15-16, MST]**

Select the expansion/compression copy destination track.

For a 96 kHz/24-bit song, you can choose only up to tracks 1–8.

For D32XD 48 kHz/24-bit or 44.1 kHz/24-bit songs, only tracks 1-16 can be selected.

A3. Times **[1…99]**

Specify the number of times that the data will be copied.

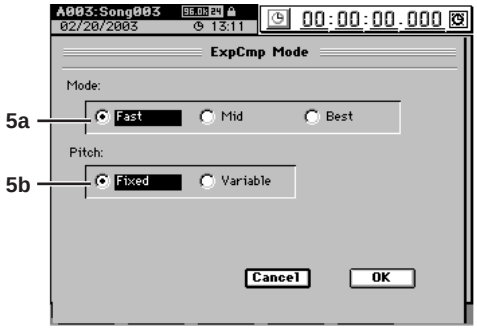
A4. Wave

This displays the audio data of the track as a waveform. Here you can set the editing locations (IN, OUT, TO, END) more precisely. (→p.139 Edit Type: "CopyTrk," Wave dialog box)

A5. Mode

Select how the expansion/compression will be processed.

This will appear when you press the **ExpComp Mode** button.



5a. Mode **[Fast, Mid, Best]**

Specify the conversion mode for expansion/compression.

Fast: Processing speed will be given priority

Mid: Mid-way between **"Fast"** and **"Best"**

Best: Audio quality will be given priority

However if **"5b.Pitch"** is set to "**Variable**," this setting will have no effect.

5b. Pitch **[Fixed, Variable]**

Select the pitch at which the data will play back after expansion/compression has been performed.

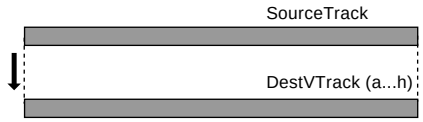
Fixed: The pitch will remain the same

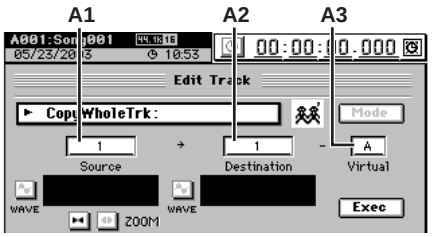
Variable: The pitch will be change

When you press the **OK** button, expansion/compression will be executed with the conversion mode that you selected. Press the **Cancel** button to cancel without executing.

CopyWholeTrk

This operation copies the track data from the beginning to the end of the copy source track (**Source**; the currently selected virtual track) to the specified virtual track of the copy destination track (**Destination**).
When this is executed (**Exec.**), the copy destination track will be overwritten.





A1. Source D32XD **[1...32, ML, MR, 1-2...31-32, MST, 1-4...29-32, 1-8...24-32, 1-16, 17-32, 1-32, ALL]**

D16XD **[1...16, ML, MR, 1-2...15-16, MST, 1-4...13-16, 1-8...9-16, 1-16, ALL]**

Select the copy source track.

For a 96 kHz/24-bit song, you can choose only up to tracks 1–8.

For D32XD 48 kHz/24-bit or 44.1 kHz/24-bit songs, only tracks 1-16 can be selected.

A2. Destination D32XD **[1...32, ML, MR, 1-2...31-32, MST, 1-4...29-32, 1-8...24-32, 1-16, 17-32, 1-32, ALL]**

D16XD **[1...16, ML, MR, 1-2...15-16, MST, 1-4...13-16, 1-8...9-16, 1-16, ALL]**

Select the copy destination track.

For a 96 kHz/24-bit song, you can choose only up to tracks 1–8.

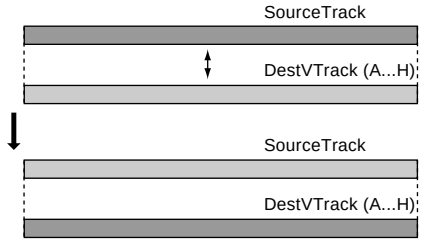
For D32XD 48 kHz/24-bit or 44.1 kHz/24-bit songs, only tracks 1-16 can be selected.

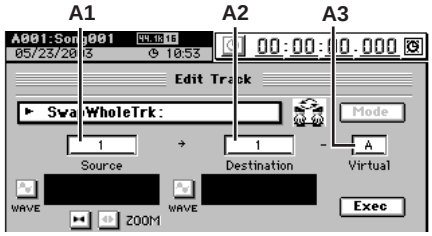
A3. DestVTrack **[A…H]**

Select the virtual track of the copy destination track (**Destination**) to which the data will be copied.

SwapWholeTrk

This operation exchanges (swaps) the track data from the beginning to the end of the swap source track (**Source**; the currently selected virtual track) with the specified virtual track of the swap destination track (**Destination**).
Use this operation when you wish to reorder the recorded tracks. When you have finished recording a song, this operation also provides a useful way to move the final data so that virtual track "a" is used for all tracks.
When this is executed (**Exec.**), all data of the **"Source"** and **"Destination"** will be exchanged.





A1. Source D32XD **[1...32, ML, MR, 1-2...31-32, MST, 1-4...29-32, 1-8...24-32, 1-16, 17-32, 1-32, ALL]**

D16XD **[1...16, ML, MR, 1-2...15-16, MST, 1-4...13-16, 1-8...9-16, 1-16, ALL]**

Select the swap source track.

For a 96 kHz/24-bit song, you can choose only up to tracks 1–8.

For D32XD 48 kHz/24-bit or 44.1 kHz/24-bit songs, only tracks 1-16 can be selected.

A2. Destination D32XD **[1...32, ML, MR, 1-2...31-32, MST, 1-4...29-32, 1-8...24-32, 1-16, 17-32, 1-32, ALL]**

D16XD **[1...16, ML, MR, 1-2...15-16, MST, 1-4...13-16, 1-8...9-16, 1-16, ALL]**

Select the swap destination track.

For a 96 kHz/24-bit song, you can choose only up to tracks 1–8.

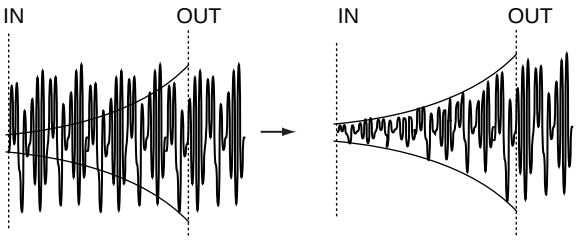
For D32XD 48 kHz/24-bit or 44.1 kHz/24-bit songs, only tracks 1-16 can be selected.

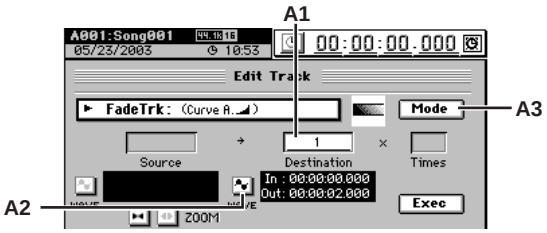
A3. DestVTrack **[A…H]**

Select the virtual track of the swap destination track (**Destination**) to which the data will be swapped.

FadeTrk

This operation fades-in or fades-out the track data in the IN–OUT range of the fade-in destination track (**Destination**). When this operation is executed, the audio data in the IN–OUT range will be smoothly faded to the level of the OUT time location.
When this is executed (**Exec.)**, the fade-in (fade-out) destination track will be overwritten.





A1. Destination D32XD **[1...32, ML, MR, 1-2...31-32, MST, 1-4...29-32, 1-8...24-32, 1-16, 17-32, 1-32, ALL]**
D16XD **[1...16, ML, MR, 1-2...15-16, MST, 1-4...13-16, 1-8...9-16, 1-16, ALL]**

Select the track to be edited.

For a 96 kHz/24-bit song, you can choose only up to tracks 1–8.

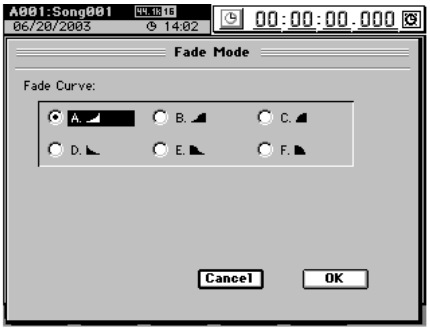
For D32XD 48 kHz/24-bit or 44.1 kHz/24-bit songs, only tracks 1-16 can be selected.

A2. Wave

This displays the audio data of the track as a waveform. Here you can set the editing locations (IN, OUT) more precisely. (→p.139 Edit Type: "CopyTrk," Wave dialog box)

A3. Mode

Press this button to display the **Fade Mode** dialog box. Use **"Fade Curve"** to select the desired fade-in or fade-out curve.



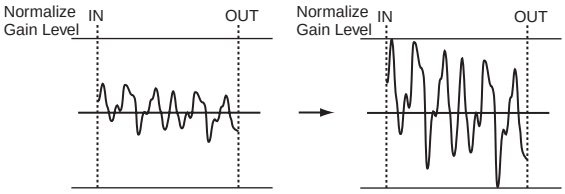
SelectFadeMode **[A…F]**

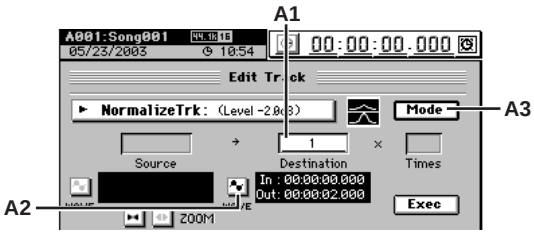
- **A.** : This curve is ideal for conventional fade-in.
- **B.** : This curve is ideal for creating cross-fades where two tracks are faded-in/out at the identical time location.
- **C.** : This curve inverts the A curve, lengthening the sound that is heard.
- **D.** : Fade-out using the A type curve.
- **E.** : Fade-out using the B type curve.
- **F.** : Fade-out using the C type curve.

Press the **OK** button to finalize the selected fade type, or press the **Cancel** button to cancel the setting.

NormalizeTrk

If the recorded level is low, you can use this operation to boost the specified region (IN–OUT) of the track data to the specified volume. The normalize-destination track will be overwritten.





A1. Destination D32XD **[1...32, ML, MR, 1-2...31-32, MST]**
D16XD **[1...16, ML, MR, 1-2...15-16, MST]**

Select the normalize-destination track.

For a 96 kHz/24-bit song, you can choose only up to tracks 1–8.

For D32XD 48 kHz/24-bit or 44.1 kHz/24-bit songs, only tracks 1-16 can be selected.

A2. Wave

This displays the waveform of the track audio, allowing you to set the editing locations (IN, OUT) more accurately. (→p.139 Edit Type: "CopyTrk," Wave dialog box)

A3. Mode **[0 dB…–63.5 dB]**

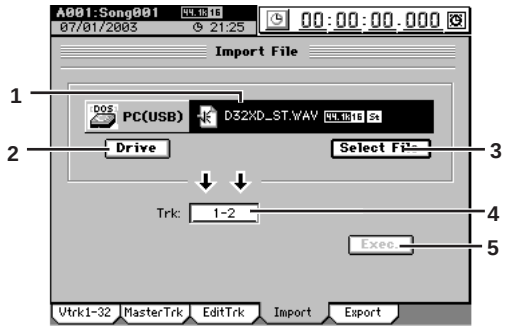
Press this button to display the **Normalize Mode** dialog box, and set **"Normalize Gain Level"** to specify the level. Press the **OK** button to set the selected normalize level, or press the **Cancel** button to discard your settings.

10-4. Import File

An audio file from the D32XD/D16XD's PC drive or CD-R/RW drive can be pasted into the beginning (location 0) of a track (→p.85).
By using the clipboard you can paste the audio file at a location other than the beginning of a track.
You can use this operation to import WAV format audio files of 44.1/48/96 kHz sampling frequency, 16/24-bit depth, and 1 (mono) or 2 (stereo) channels.

If you are importing from CD media, WAV format files stored on ISO9660 Level 1 format CD-ROM, CD-R, or CD-RW are supported.

*When you execute (**"Exec."**), the import-destination track will be overwritten.*



1. File name cell
Displays the name of the import-source audio file. This will be the file name you chose by pressing the **Select File** button.

2. Drive **[CD, PC (USB)]**
Selects the import-source drive. When you press this button, the **Select Drive** dialog box will appear. Select a drive and press the **Yes** button.

3. Select File
Selects the audio file that will be imported.
When you press this button, the **Select File** dialog box will appear. Select a file and press the **OK** button. If you press the **Cancel** button, your selection will be discarded.

3a. Upper level
This area indicates the directory level that is one level above the currently selected folder.

3b. File window
This area shows the folder structure of the current level. Folders and the files that can be imported are displayed here.

3c. Close
Moves upward to the next higher folder.

3d. Open
If the selected item is a folder, opens that folder.

3e. Prev
Plays back the first six seconds (for 44.1 kHz/16-bit data) of the selected audio file.

You cannot play back while loading the file.

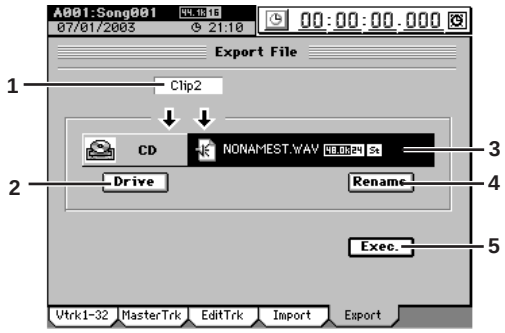
4. Trk D32XD **[1...32, ML, MR, 1-2...31-32, MST, Clip]**
D16XD **[1...16, ML, MR, 1-2...15-16, MST, Clip]**
Select the import-destination track.
ML and **MR** are the master track L and R, and **MST** is the stereo master track

5. Exec.
When you press this button, the **Import File** dialog box will appear.
Press the **Yes** button to execute the import, or press the **No** button to cancel.
If you import a song whose sampling frequency and bit depth differs from that of the current song, the sampling frequency and bit-depth will be converted. If the song has a different sampling frequency, conversion will be performed; this will take a certain amount of time.

5a. Dither
By pressing this button when importing a 24-bit file into a 16-bit song, you can minimize the quantization noise that may occur when the bit depth is converted.

10-5. Export File

Audio track data copied to the D32XD/D16XD's clipboard can be exported as an audio file to the PC drive or CD-R/RW drive (→p.86).
The audio file will be exported as a WAV format file of the same sampling frequency and bit depth as the data in the clipboard.



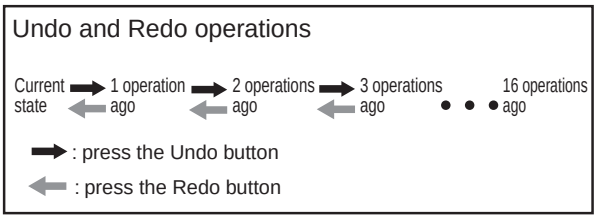
1. **Clip#**
   Indicates the state of the clipboard.
   # is the number of tracks in the clipboard. If you export four or more tracks in a single operation, all will be saved as mono files.
2. **Drive** **[CD, PC (USB)]**
   Selects the export-destination drive. When you press this button, the **Select Drive** dialog box will appear. Select the desired drive, and press the **Yes** button.
3. **File name**
   Displays the file name that will be saved on the export-destination. If you want to edit this name, press the **Rename** button.
4. **Rename**
   When you press this button, the **Rename** dialog box will appear, allowing you to rename the file.
   For details on the allowable file names, refer to "More about drives and files" (→p.174).
5. **Exec.**
   When you press this button, the **Export File** dialog box will appear. Press the **Yes** button to export the data, or press the **No** button to cancel.
   If you want to abort an export operation while it is being performed, press the **Cancel** button.
   When the export has been completed, the display will indicate **Completed**. Press the **OK** button.
   Before exporting to a CD, you can specify the writing speed and whether the disc will be finalized. Finalize the disc if you will not be writing any further data to it.

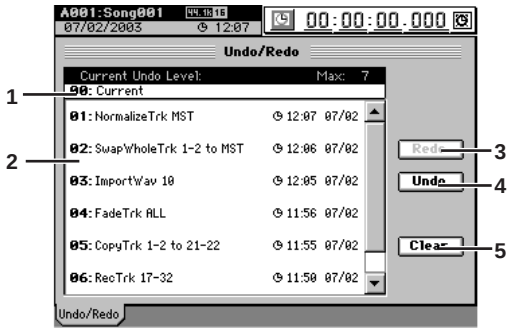
   It is not possible to perform just the Finalize operation here. Finalization will be performed after the export is executed.

11. UNDO

After executing the operations listed below, you can use the Undo function to return the data to the state it was in prior to performing that operation. If desired, you can then use the Redo function to restore the most recent edit.

- **Recording**
- **Track editing**
  CopyTrack, InsertTrack, EraseTrack, DeleteTrack, SwapTrack, ReverseTrack, OptimizeTrack, Exp/CompTrack, CopyWholeTrack, SwapWholeTrack, FadeTrack, NormalizeTrack
- **Audio file import**





1. **Current undo level**
   This area indicates the current state, which you can revert to prior states.
2. **Undo list** **[01…16]**
   This lists the operations that can be undone.
   When you execute Undo, you will return to the state prior to executing the selected operation.
   The undo list saves up to the 16 most recent operations.

   *Use the **Redo** or **Undo** buttons to select "undo levels" in the undo list. You cannot select these directly by pressing the screen.*
3. **Redo**
   Executes a Redo operation.
4. **Undo**
   Executes an Undo operation.
5. **Clear**
   You can press this button to erase the undo data that is preserved, thereby recovering more free space on the disk.

   note *The D32XD/D16XD preserves up to sixteen levels of recording and editing history, and lets you use the Undo function to revert to prior states. For this reason, old data that no longer exists in the tracks may still remain on the disk without being erased. This data will occupy space on the disk, and may cause the available recording time to be less than you would otherwise expect.*

12. STORE

This stores the current location so it can be saved as a location, mark or scene.

When you press the **STORE** key, the location at that moment is preserved, and you can assign that location to a locate, scene, or mark point by pressing the appropriate key. If you press the **STORE** key once again instead of pressing a key to specify the assignment, the stored location will be discarded. For details on registering and using locations, refer to Locate (→p.38), Scene (→p.52), or Mark (→p.39).

13. SCENE

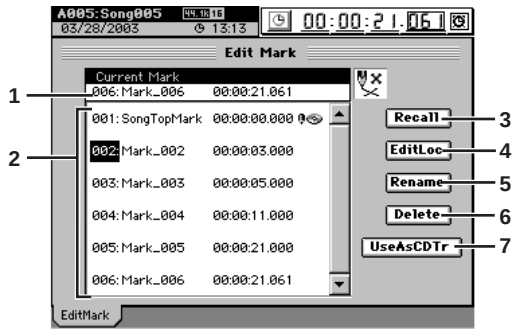
Refer to "3c. FADER/PAN/AUTOMATION" (→p.105, [*108]), Edit Scene.

14. MARK

You can register marks at a variety of locations, and then instantly change the current location of the song to the location registered to a mark. You can also assign a name to each mark, and use them to indicate sections within a song. (→p.39)
If you add the Album CD Track Marks to a mark, the mark will be recognized as a track division for a CD you create.

note *You can also use a PS-1 foot switch (sold separately) instead of the **MARK** key. (→p.126)*

You can register up to one hundred marks in each song. Mark 001 is automatically created at the counter 0 location with a name of **"Song Top Mark."**



1. **Current Mark** **[001…100]**
   This is the mark at or immediately before the current location. The mark name, location, and the Album CD Track Marks are displayed beside the mark number.
2. **Mark list** **[001…100]**
   Here you can select the mark number that you want to recall, edit, rename, or delete. The mark name, location, and the Album CD Track Marks are displayed beside the mark number. Mark numbers are reassigned automatically in order of their location.
3. **Recall**
   When you press this button, the mark selected in the mark list will be recalled, and the current song location will change to that location.
4. **EditLoc**
   When you press this button, the **Edit Mark Location** dialog box will appear. Edit the location of the mark selected in the mark list, and press the **Yes** button to apply the change. To discard the change, press the **No** button.

   You cannot edit the location mark 001.
5. **Rename**
   This lets you rename the mark selected in the mark list. Press the button to display the **Rename** dialog box, and edit the name of the mark. You can input a name of up to sixteen characters. (→p.97)
6. **Delete**
   Press this button to open the **Delete** dialog box, and delete the mark. If you turn the **Select All** button on (highlighted), all marks will be selected for deletion. To delete the marks, press the **Yes** button. If you decide not to delete, press the **No** button.

   You cannot delete mark 001.

   Deletion of a mark cannot be Undone.
7. **Use As CD Tr**
   When you want to write a continuous live recording or a long song to a CD and create track indexes to mark certain sections or individual movements, you can use this setting to assign the selected mark as a track divider on the CD.
   When you select a mark in the mark list and press the **Use As CD Tr** button, a CD Track Mark icon "" will be displayed for that mark, and it will be assigned as a track divider. You can cancel this assignment by pressing the **Use As CD Tr** button once again.

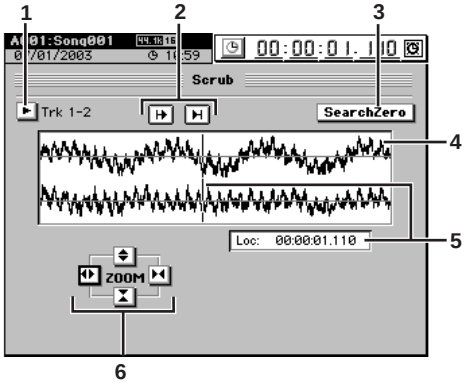
   Album CD Track Marks are used only when you write an Album CD Project.
   If you write using Track At Once, the Album CD Track Marks are ignored, and the song will be written as one track (song).

15. SCRUB

This lets you "scrub" the audio data in order to register or edit locate points or mark locations more precisely.

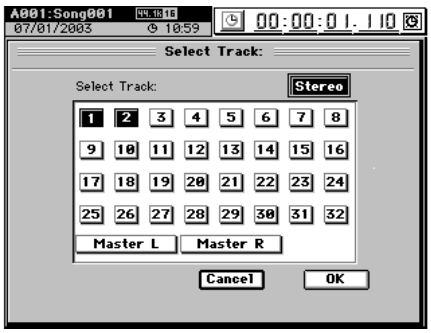
Press the **SCRUB** key to display the **"Scrub"** page. To execute the Scrub function, press any other page mode key.

The Scrub function lets you play back the track data by turning the **value dial**, so that you can find a desired location in the song while listening to the sound.
This is analogous to manually turning a vinyl record on a turntable to find the beginning of a song while listening to the sound.
The waveform window will show the waveform of the selected track.

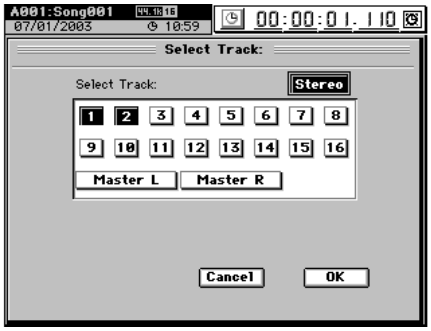


1. **Track selection**
   Press the popup button, use the buttons in the **Select Track** dialog box to select the track in which you want to find a location, and press the **OK** button. If you press the **Stereo** button, the waveforms of two adjacent channels will be displayed in the upper and lower part of the waveform window.

D32XD



D16XD



2. **Preview playback buttons**
   Plays back approximately two seconds starting from the current location (the Play From function).
   Plays back approximately two seconds ending at the current location (the Play To function).

3. **Search Zero**
   If this button is pressed, you can turn the **value dial** to find the next or previous zero-cross point.

   note *A "zero-cross" point is a location where the waveform level crosses the ±0 point (the horizontal line in the center of the waveform window).*

4. **Waveform window**
   This displays the waveform of the selected track.

5. **Loc (Location)** **[000:00.000…]**
   This displays the current location. The current location is also shown by the vertical bar in the waveform window. You can turn the **value dial** to move this while hearing the audio and watching the waveform location.

6. **ZOOM**
   Adjusts the size of the waveform display and the playback speed:
   vertically expands the waveform display.
   vertically shrinks the waveform display.
   horizontally expands the waveform display.
   horizontally shrinks the waveform display.

16. LOC1/IN, … LOC6

These keys are used to store locations within the song. **LOC1/IN…LOC6** are used in the following ways.

- Locate points (→p.38)
  You can move to a registered location by pressing the corresponding key.
- In/Out points for loop playback (→p.68)
- In/Out points for auto-punch recording (→p.66)
- Editing points for track editing (→p.69)

To register a location, press the **STORE** key and then press the desired LOC1–6 key.

Locate functions

The location that you register for the **LOC1/IN** key is used for the following purposes.

- Locate point 1 (IN location)
- Punch-in location for auto-punch recording
- Playback start location for loop playback
- The following locations for track editing operations
  Starting location of the copy-source for **"CopyTrk"**
  Starting location of the inserted silence for **"InsertTrk"**
  Starting location of the erased region for **"EraseTrk"**
  Starting location of the deleted region for **"DeleteTrk"**
  Starting location of the swap-source and swap-destination for **"SwapTrk"**
  Starting location of the data to be reversed for **"ReverseTrk"**
  Starting location for **"OptimizeTrk"**
  Starting location of the data to be expanded/compressed for **"Exp/CompTrk"**
  Starting location for **"FadeTrk"**
  Starting location for **"NormalizeTrk"**

The location that you register for the **LOC2/OUT** key is used for the following purposes.

- Locate point 2 (OUT location)
- Punch-out location for auto-punch recording
- Playback end location for loop playback
- The following locations for track editing operations
  Ending location of the copy-source for **"CopyTrk"**
  Ending location of the inserted silence for **"InsertTrk"**
  Ending location of the erased region for **"EraseTrk"**
  Ending location of the deleted region for **"DeleteTrk"**
  Ending location of the swap-source and swap-destination for **"SwapTrk"**
  Ending location of the data to be reversed for **"ReverseTrk"**
  Ending location for **"OptimizeTrk"**
  Ending location of the data to be expanded/compressed for **"Exp/CompTrk"**
  Ending location for **"FadeTrk"**
  Ending location for **"NormalizeTrk"**

The location that you register for the **LOC3/TO** key is used for the following purposes.

- Locate point 3 (TO location)
- The following locations for track editing operations
  Starting location of the copy-destination for **"CopyTrk"**
  Starting location of the reverse-copy destination for **"ReverseTrk"**
  Starting location + copy-destination location of the expanded/compressed data for **"Exp/CompTrk"**

The location that you register for the **LOC4/END** key is used for the following purposes.

- Locate point 4 (END location)
- The following location for a track editing operation Ending location of the expanded/compressed data for **"Exp/CompTrk"**

The location that you register for the **LOC5** key is used for the following purposes.

- Locate point 5
- **In Time** of the D32XD's **"REC MODE"** event

The location that you register for the **LOC6** key is used for the following purposes.

- Locate point 6
- **Out Time** of the D32XD's **"REC MODE"** event

17. ENTER

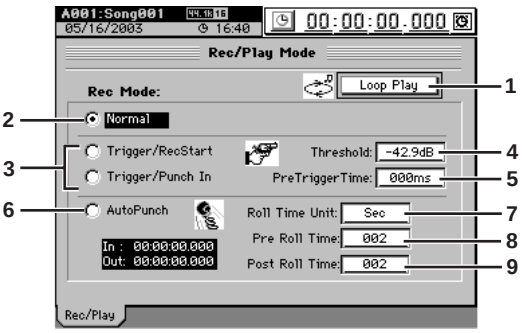
By pressing the **ENTER** key, you can finalize a parameter selection or turn it on/off.

18. MARK JUMP

Each time you press these keys, you will move to the location of the previous or next mark. Refer to "Using the MARK JUMP keys to move" (→p.39).

19. REC/PLAY MODE

Here you can make settings for trigger, loop, and auto-punch.



1. **Loop Play**
   If this is on, the region between **LOC1/IN** and **LOC2/OUT** will play back repeatedly. (→p.68)
   The **LOOP** indicator will light at this time.

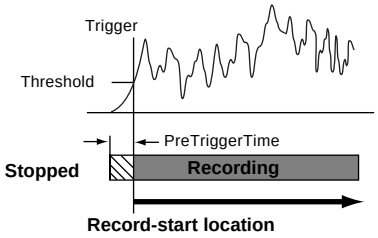
   *Loop Play is not available if the "**MIDI Sync**" setting (→p.132) is "**MTC Slave.**"*

2. **Normal**
   Recording will occur normally.

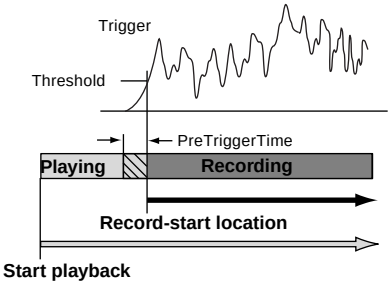
3. **Trigger recording [Trigger/RecStart, Trigger/Punch In]**
   Trigger recording will be used. Recording will be started (**"triggered"**) when the volume of the input signal exceeds the threshold level (**Threshold**) you specify (→p.66). If you press either of these radio buttons, the **Trigger** indicator will light.

   *Recording will not start if the volume of the input signal does not reach the threshold level (specified by **Threshold**). In this case, press the **STOP** key to cancel record-ready mode, and change the "**Threshold**" setting.*

Trigger/RecStart recording



Trigger/Punch-In recording



Trigger/RecStart:
Press the **REC** key (**REC** and **PLAY** keys will blink) to enter record-ready mode.
When the signal being input to a channel whose **REC/PLAY** key is set to REC exceeds the threshold level, recording will begin automatically.
While in record-ready mode, you can press the **STOP** key or **REC** key to cancel record-ready mode.

Trigger/Punch-In:
Press the **REC** key (the key will blink) to enter record-ready mode.
Press the **PLAY** key to play back the playback track(s).
When the signal being input to the currently-playing channel exceeds the threshold level, recording will begin automatically.
While in record-ready mode, you can press the **STOP** key or **REC** key to cancel record-ready mode.

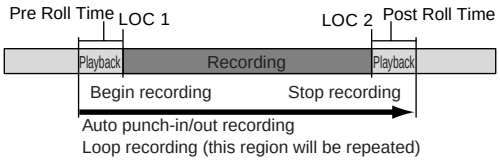
4. **Threshold [–∞, –90.3…–30.8 dB]**
   Specifies the threshold level for the input signal at which recording will be triggered when the trigger recording function is used. Recording will begin when the input level exceeds this setting.

   Normally you should set this as low as possible without allowing recording to be triggered by noise. The appropriate level will depend on the input source. Re-adjust this setting if recording begins too early or too late.

5. **PreTriggerTime [0…600ms]**
   Specifies the length of sound prior to the record-start time that will be captured when using trigger recording. Trigger recording will start recording when the input signal exceeds the **"Threshold"** level, but depending on the threshold setting and on the type of source, the initial attack of the first note may be lost. In such cases, you can set the **"PreTriggerTime"** so that the lower-level portion of the sound that precedes the actual start of recording will also be recorded.

   This is not valid at the beginning of the song. Also, if you use trigger recording to continue recording after the end of a previously-recorded track, a PreTriggerTime setting other than "000 ms" will cause the corresponding length of the previously-recorded sound to be lost.

6. **AutoPunch**
   Auto punch-in/out recording is a function that automatically initiates recording (punch-in) and stops recording (punch-out) at the locations that you specify beforehand. When **"AutoPunch"** is on, the **AUTO PUNCH** indicator will be lit. When you record, punch-in/out recording will be performed.
   When you record, playback will begin from a location that is the pre-roll length before the registered IN point. Recording will occur over the specified region (IN–OUT), and then playback will continue and then stop at the post-roll point.
7. **Roll Time Unit**
   Select the units for the pre/post roll times. You can select either seconds or measures.
8. **Pre Roll Time**
9. **Post Roll Time**
   Specify the pre-roll and post-roll. When using auto punch recording, you can specify a **pre-roll** time so that you can be ready to start recording at the punch-in (**IN**) point. Set the **post-roll** time so that you can confirm the transition from the end of recording (**OUT**) to the material that follows.



note *If you perform auto punch-in/out recording when Loop Play is on, recording will occur repeatedly, and each "pass" or "take" will be preserved in the undo list.*

*When recording the master track, the only **"Rec Mode"** you can use is **Normal** and **Auto Punch**.*

*The number of simultaneously-recordable tracks is limited when using punch-recording. For details about limitations on the number of tracks, refer to **Song Type** (→p.136). If you attempt to record more than the allowable number of tracks, recording cannot be executed.*

*If **MIDI Sync** is set to **MTC**, you cannot execute **Trigger/Rec-Start** or **Auto Punch**.*

*If **MIDI Sync** is set to **MTC Slave**, Loop Play will be ignored even if it is turned on.*

20. Transport keys

PLAY key
Press this button to begin playback (key lit). This key will blink during fast-forward, rewind, MTC Slave, or Trig Rec Start.

REC key
Arms the record mode. Recording is possible only if at least one track is set to REC. When you press this key, the D32XD/D16XD will enter record-ready mode (key blinking), and recording will begin when you then press the **PLAY** key (key lit).

note *The conditions for initiating recording will differ depending on the **RecMode**, **MMC**, and **MTC** settings.*

note *If the foot switch function is set to **"Punch In Out,"** you can use the foot switch instead of the **REC** key.*

STOP key
Stops recording or playback.
By holding down the **STOP** key and pressing the **MARK JUMP** (◄) key you can move to the beginning of the song. By holding down the **STOP** key and pressing the **MARK JUMP** (►) key you can move to the end of the song.

FF key
Fast-forward will occur while you hold down the **FF** key during playback.
If you press the **FF** key while stopped, fast-forward will continue until you press the **STOP**, **PLAY**, **LOC**, or **MARK JUMP** keys.
The key will light while fast-forward is occurring.

REW key
Rewind will occur while you hold down the **REW** key during playback.
If you press the **REW** key while stopped, fast-forward will continue until you press the **STOP**, **PLAY**, **LOC**, or **MARK JUMP** keys.
The key will light while rewind is occurring.

note *If the **REC/PLAY MODE** setting **Loop Play** is on, performing fast-forward/rewind will cause fast-forward/rewind to continue until you press the **STOP**, **PLAY**, **LOC**, or **MARK JUMP** keys.*

Effect parameters

Algorithm list

STEREO TYPE

Category	No.	Name	Size
Reverb&Delay	1	Reverb Hall	2
	2	Smooth Hall	2
	3	Reverb Wet Plate	2
	4	Reverb Dry Plate	2
	5	Reverb Room	2
	6	Bright Room	2
	7	Eary Reflection	2
	8	L/C/R Delay	2
	9	Stereo/Cross Delay	2
	10	St.MultiTapDelay	2
	11	St.Modulation Dly	2
	12	St.Dynamic Delay	2
	13	Auto Panning Delay	2
Modulation&Pitch	14	Stereo Chorus	2
	15	Stereo Flanger	2
	16	Stereo Phaser	2
	17	Stereo Vibrato	2
	18	Stereo Tremolo	2
	19	St.Pitch Shifter	2
Dynamics&Filter	20	Stereo Compressor	2
	21	Stereo Expander	2
	22	Stereo Limiter	2
	23	Stereo Gate	2
	24	Stereo Filter	2
	25	Stereo Wah	2
	26	Multiband Limiter	4
SFX&Etc	27	St.Analog Record	2
	28	Talking Modulator	2
	29	St.Ring Modulator	2
	30	Rotary Speaker	2

MONO TYPE

Category	No.	Name	Size
Reverb&Delay	31	Mono Reverb Hall	1
	32	Mono Reverb Plate	1
	33	Mono Reverb Room	1
	34	Mono ER	1
	35	Mono Delay	1
	36	Mn.Multitap Delay	1
Modulation&Pitch	37	Mono Chorus	1
	38	Mono Flanger	1
	39	Mono Phaser	1
	40	Mono Tremolo	1
	41	Mn.Pitch Shifter	1
Dynamics&Filter	42	Mono Compressor	1
	43	Mono Limiter	1
	44	Mono Expander	1
	45	Mono Gate	1
	46	Mono Filter	1
	47	Mono Wah	1
SFX&Etc	48	AnalogRecord	1
	49	Mn.Ring Modulator	1
	50	Tube Pre Amp Sim	1
	51	Mic Simulator	2
Multi	52	GuitarMulti	8

Effect program list

STEREO TYPE

Category: Reverb&Delay 20

No.	Program Name	Algorithm No.	Name
1	Reverb Hall	1	Reverb Hall
2	Smooth Hall	2	Smooth Hall
3	Wet Plate Reverb	3	Reverb Wet Plate
4	Dry Plate Reverb	4	Reverb Dry Plate
5	Reverb Room	5	Reverb Room
6	Bright Room	6	Bright Room
7	Eary Reflection	7	Eary Reflection
8	ARENA	1	Reverb Hall
9	Cathedral	2	Smooth Hall
10	Dark Plate	3	Reverb Wet Plate
11	Bright Plate	4	Reverb Dry Plate
12	Club	4	Reverb Room
13	Listening Room	6	Bright Room
14	Garage	6	Bright Room
15	L/C/R Delay	8	L/C/R Delay
16	St/Cross Delay	9	Stereo/Cross Delay
17	St.MultiTapDelay	10	St.MultiTapDelay
18	St.Mod Delay	11	St.Modulation Dly
19	St.Dynamic Delay	12	St.Dynamic Delay
20	St.AutoPan Delay	13	Auto Panning Delay

Category: Modulation&Pitch 11

No.	Program Name	Algorithm No.	Name
21	Stereo Chorus	14	Stereo Chorus
22	High Band Chorus	14	Stereo Chorus
23	Stereo Flanger	15	Stereo Flanger
24	High Band Flange	15	Stereo Flanger
25	Stereo Phaser	16	Stereo Phaser
26	Analog Phaser	17	Stereo Phaser
27	Stereo Vibrato	17	Stereo Vibrato
28	Vibrato/Chorus	17	Stereo Vibrato
29	Stereo Tremolo	18	Stereo Tremolo
30	Vintage Tremolo	18	Stereo Tremolo
31	St.Pitchshifter	19	St.Pitch Shifter

Category: Dynamics&Filter 24

No.	Program Name	Algorithm No.	Name
32	StereoCompressor	20	Stereo Compressor
33	Stereo Expander	21	Stereo Expander
34	Stereo Limiter	22	Stereo Limiter
35	Stereo Gate	23	Stereo Gate
36	Stereo Filter	24	Stereo Filter
37	Stereo Wah	25	Stereo Wah
38	MultiBandLimiter	26	MultiBandLimiter
39	Studio Compessor	20	Stereo Compressor
40	Tube Compressor	20	Stereo Compressor
41	Mastering Comp	20	Stereo Compressor
42	Studio Limiter	22	Stereo Limiter
43	Analog Limiter	22	Stereo Limiter
44	Hard Limiter	22	Stereo Limiter

45	Master CD	26	MultiBandLimiter
46	Remaster L.A	26	MultiBandLimiter
47	Remaster Pop	26	MultiBandLimiter
48	Remaster Dance	26	MultiBandLimiter
49	Two Mix 60's	26	MultiBandLimiter
50	Two Mix 70's	26	MultiBandLimiter
51	Two Mix 80's	26	MultiBandLimiter
52	Two Mix Girl Pop	26	MultiBandLimiter
53	Two Mix Dance	26	MultiBandLimiter
54	Two Mix HipHop	26	MultiBandLimiter
55	Digital Rock	26	MultiBandLimiter

Category: SFX&Etc 7

No.	Program Name	Algorithm No.	Name
56	St.Analog Record	27	St.Analog Record
57	TalkingModulator	28	Talking Modulator
58	St.RingModulator	29	St.Ring Modulator
59	Rotary Speaker	30	Rotary Speaker
60	Old Record	27	St.Analog Record
61	Talking Delay	28	Talking Modulator
62	Jet Ring	29	St.Ring Modulator

MONO TYPE

Category: Reverb&Delay 10

No.	Program Name	Algorithm No.	Name
63	Hall	31	Mono Reverb Hall
64	Plate	32	Mono Reverb Plate
65	Room	33	Mono Reverb Room
66	Small Hall	31	Mono Reverb Hall
67	Light Plate	32	Mono Reverb Plate
68	Studio Room	33	Mono Reverb Room
69	EaryReftections	34	Mono ER
70	Delay	35	Mono Delay
71	Analog Delay	35	Mono Delay
72	3 Tap Delay	36	Mn.Multitap Delay

Category: Modulation&Pitch 10

No.	Program Name	Algorithm No.	Name
73	Chorus	37	Mono Chorus
74	Analog Chorus	37	Mono Chorus
75	Flanger	38	Mono Flanger
76	Bass Flanger	38	Mono Flanger
77	Phaser	39	Mono Phaser
78	Vintage Phaser	39	Mono Phaser
79	Tremolo	40	Mono Tremolo
80	Vintage Tremolo	40	Mono Tremolo
81	Pitchshifter	41	Mn.Pitch Shifter
82	Octave Voice	41	Mn.Pitch Shifter

Category: Dynamics&Filter 17

No.	Program Name	Algorithm No.	Name
83	Compressor	42	Mono Compressor
84	Limiter	43	Mono Limiter
85	Expander	44	Mono Expander
86	Gate	45	Mono Gate
87	Filter	46	Mono Filter
88	Wah	47	Mono Wah
89	Kick Compressor	42	Mono Compressor
90	SNR Compressor	42	Mono Compressor
91	Bass Compressor	42	Mono Compressor
92	Vocal Compressor	42	Mono Compressor
93	Vocal Limiter	43	Mono Limiter
94	TomTom Limiter	43	Mono Limiter
95	Cutting Expander	44	Mono Expander
96	SNR Expander	44	Mono Expander
97	Cymbal Gate	45	Mono Gate
98	Noise Gate	45	Mono Gate
99	Chemical Filter	46	Mono Filter

Category: SFX&Etc 14

No.	Program Name	Algorithm No.	Name
100	Analog Record	48	Mn.Analog Record
101	Ring Modulator	49	Mn.Ring Modulator
102	Tube Mic PreAmp	50	Tube Pre Amp Sim
103	Old Mic PreAmp	50	Tube Pre Amp Sim
104	DriveTubePreAmp	50	Tube Pre Amp Sim
105	RadioTone	50	Tube Pre Amp Sim
106	Mic Simulator	51	Mic Simulator
107	Vintage Dyna Mic	51	Mic Simulator
108	Vintage Tube Mic	51	Mic Simulator
109	Studio Mic & Pre	51	Mic Simulator
110	Drums Dyna Mic	51	Mic Simulator
111	Purcussion Mic	51	Mic Simulator
112	OverTop Mic	51	Mic Simulator
113	Bass Drum Mic	51	Mic Simulator

Category: Multi 15

No.	Program Name	Algorithm No.	Name
114	VOX AC15	52	GuitarMulti
115	VOX AC30	52	GuitarMulti
116	VOX AC30TB	52	GuitarMulti
117	BLACK 2X12	52	GuitarMulti
118	TWEED 1X12	52	GuitarMulti
119	TWEED 4X10	52	GuitarMulti
120	BOUTIQUE CLEAN	52	GuitarMulti
121	BOUTIQUE OD	52	GuitarMulti
122	UKBLUES	52	GuitarMulti
123	UK'70S	52	GuitarMulti
124	UK'80S	52	GuitarMulti
125	UK'90S	52	GuitarMulti
126	UK MODERN	52	GuitarMulti
127	RECTO	52	GuitarMulti
128	US HIGAIN	52	GuitarMulti

About the effect algorithms

The effect algorithms can be broadly divided into mono and stereo types.
For an insert effect, you can select a program that uses either type of algorithm.
For a master effect and final effect, you cannot select programs that use a mono algorithm.

Example

Algorithm number: Algorithm name

Parameter name shown on screen (parameter name)	Range of parameter Explanation

8: St.Modulation Delay

R TimeR (Delay Time)	0...2.500sec (1.250sec)
	Sets the delay time for the right channel
*LFO Speed	0.02...20.00Hz
	Sets the LFO speed

Values shown in parentheses ( ) are for 96 kHz operation.

Parameters marked by an "*" in front of the screen parameter name can be controlled by an external device such as an expression pedal.

Stereo-type

Category	No.	Name	Size
Reverb&Delay	1	Reverb Hall	2
	2	Smooth Hall	2
	3	Reverb Wet Plate	2
	4	Reverb Dry Plate	2
	5	Reverb Room	2
	6	Bright Room	2
	7	Eary Reflection	2
	8	L/C/R Delay	2
	9	Stereo/Cross Delay	2
	10	St.MultiTapDelay	2
	11	St.Modulation Dly	2
	12	St.Dynamic Delay	2
	13	Auto Panning Delay	2
Modulation&Pitch	14	Stereo Chorus	2
	15	Stereo Flanger	2
	16	Stereo Phaser	2
	17	Stereo Vibrato	2
	18	Stereo Tremolo	2
	19	St.Pitch Shifter	2
Dynamics&Filter	20	Stereo Compressor	2
	21	Stereo Expander	2
	22	Stereo Limiter	2
	23	Stereo Gate	2
	24	Stereo Filter	2
	25	Stereo Wah	2
	26	Multiband Limiter	4
SFX&Etc	27	St.Analog Record	2
	28	Talking Modulator	2
	29	St.Ring Modulator	2
	30	Rotary Speaker	2

Category: Reverb&Delay
Reverb/delay-type effects

These effects simulate acoustic ambience such as the reverberation of a hall.

1: Reverb Hall

This hall-type reverb simulates the reverberation of mid-size concert halls or ensemble halls.

2: Smooth Hall

This hall-type reverb simulates the reverberation of larger halls and stadiums, and creates a smooth release.

3: Reverb Wet Plate

This plate reverb simulates warm (dense) reverberation.

4: Reverb Dry Plate

This plate reverb simulates dry (light) reverberation.

Rev Time (Reverb Time)	0.1...10.0sec
	Sets the reverberation time
HiDamp (High Damp)	53Hz...20.0kHz, THRU
	Sets the damping amount in the high range
PreDelay (Pre Delay)	0...200msec
	Sets the delay time from the dry sound
Dry:Wet	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds
EQ Trim	–15...+15dB
	Sets the equalizer trim level
LEQ Gain (Pre LEQ Gain)	–15...+15dB
	Sets the gain of Low EQ
HEQ Gain (Pre HEQ Gain)	–15...+15dB
	Sets the gain of High EQ
P.DlyThru (Pre Delay Thru)	0...100%
	Sets the mix ratio of non-delay sound

: Pre Delay [msec], : Pre Delay Thru [%]
The **"Pre Delay"** sets the delay time to the reverb input, allowing you to control spaciousness.
Using the **"Pre Delay Thru"** parameter, you can mix the dry sound without delay, emphasizing the attack of the sound.

5: Reverb Room

This room-type reverb emphasizes the early reflections that make the sound tighter. Changing the balance between the early reflections and reverb sound allows you to simulate nuances, such as the type of walls of a room.

6: Bright Room

This room-type reverb emphasizes the early reflections that make the sound brighter

Rev Time (Reverb Time)	0.1...3.0sec
	Sets the reverberation time
HiDamp (High Damp)	53Hz...20.0kHz, THRU
	Sets the damping amount in the high range
PreDelay (Pre Delay)	0...200msec
	Sets the delay time from the dry sound
Dry:Wet	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds

EQ Trim	–15...+15dB
	Sets the equalizer trim level
LEQ Gain (Pre LEQ Gain)	–15...+15dB
	Sets the gain of Low EQ
HEQ Gain (Pre HEQ Gain)	–15...+15dB
	Sets the gain of High EQ
P.DlyThru (Pre Delay Thru)	0...100%
	Sets the mix ratio of non-delay sound
Rev Level (Reverb Level)	0...100%
	Sets the reverberation level
ER Level	0...100%
	Sets the level of early reflections

: ER Level, : Reverb Level
These parameters set the early reflection level and reverb level. Changing these parameter values allows you to simulate the type of walls in the room. That is, a larger **"ER Level"** simulates a hard wall, and a larger **"Reverb Level"** simulates a soft wall.

7: Eary Reflection

This effect is only the early reflection part of a reverberation sound, and adds presence to the sound. You can select one of the four decay curves.

Type	Sharp, Loose, Modulated, Reverse
	Selects the decay curve for the early reflection
ER Time	10...800msec
	Sets the time length of early reflection
Predly (Pre Delay)	0...200msec
	Sets the time taken from the original sound to the first early reflection
EQ Trim	–15...+15dB
	Sets the equalizer trim level
LEQ Gain (Pre LEQ Gain)	–15...+15dB
	Sets the gain of Low EQ
HEQ Gain (Pre HEQ Gain)	–15...+15dB
	Sets the gain of High EQ
Dry:Wet	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds

: Type
This parameter selects the decay curve for the early reflection.

8: L/C/R Delay

This multitap delay outputs three Tap signals to the left, right, and center respectively. You can also adjust the left and right spread of the delay sound.

L Time (L Delay Time)	0...2.730sec (1.360sec)
	Sets the delay time of TapL
C Time (C Delay Time)	0...2.730sec (1.360sec)
	Sets the delay time of TapC
R Time (R Delay Time)	0...2.730sec (1.360sec)
	Sets the delay time of TapR
Dry:Wet	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds
L LevelL (Delay Level)	0...100%
	Sets the output level of TapL
C LevelC (Delay Level)	0...100%
	Sets the output level of TapC
R LevelR (Delay Level)	0...100%
	Sets the output level of TapR
Spread	0...100%
	Sets the width of the stereo image of the effect sound
Fdback (C) (Feedback (C Delay))	–100...+100%
	Sets the feedback amount of TapC
Fb.LoDamp (Feedback Low Damp)	THRU, 21Hz...8.00kHz
	Sets the damping amount in the low range
Fb.HiDamp (Feedback High Damp)	53Hz...20.0kHz, THRU
	Sets the damping amount in the high range
In Level (Input Level)	0...100%
	Sets the input level to the effect

: High Damp, : Low Damp
These parameters set the damping amount of high range and low range. The tone of the delayed sound becomes darker and lighter as it feeds back.

: Spread
This parameter sets the pan width of the effect sound. The stereo image is widest with a value of "50," and the effect sound of both channels is output from the center with a value of "0."

9: Stereo/Cross Delay

This is a stereo delay, and can by used as a cross-feedback delay effect in which the delay sounds cross over between the left and right by changing the feedback routing.

L Time (L Delay Time)	0...2.730sec (1.360sec)
	Sets the left delay time
R Time (R Delay Time)	0...2.730sec (1.360sec)
	Sets the right delay time
Type (Stereo/Cross)	Stereo, Cross
	Switches between stereo delay and cross-feedback delay
Dry:Wet	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds
L Fdback (L Feedback)	–100...+100%
	Sets the feedback amount for the left channel
R Fdback (R Feedback)	–100...+100%
	Sets the feedback amount for the right channel
LoDamp (Low Damp)	THRU, 21Hz...8.00kHz
	Sets the damping amount in the low range
HiDamp (High Damp)	53Hz...20.0kHz, THRU
	Sets the damping amount in the high range
Spread	0...100%
	Sets the width of the stereo image of the effect sound
In Level (Input Level)	0...100%
	Sets the input level to the effect

10: St. Multitap Delay (Stereo Multitap Delay)

The left and right Multitap Delays have two taps respectively. Changing the routing of feedback and tap output allows you to create various patterns of complex effect sounds.

Tap1Time	0...2.730sec (1.360sec)
	Sets the delay time of Tap1
Tap2Time	0...2.730sec (1.360sec)
	Sets the delay time of Tap2
Type	Normal, CrossFdback, CrossPan1, CrossPan2
	Switches the left and right delay routing
Dry:Wet	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds
Tap1Level	0...100%
	Sets the output level of Tap1
Tap2Level	0...100%
	Sets the output level of Tap2
T1.Fdback (Tap1 Feedback)	–100...+100%
	Sets the Tap1 feedback amount
Spread	0...100%
	Sets the width of the stereo image of the effect sound

LoDamp (Low Damp)	THRU, 21Hz...8.00kHz
Sets the damping amount in the low range	
HiDamp (High Damp)	53Hz...20.0kHz, THRU
Sets the damping amount in the high range	
In Level (Input Level)	0...100%
Sets the input level to the effect	

: Type
The left/right panning of the delay can be modified by changing the connections of the left and right delay. Be aware that different sounds must be input to the left and right channels in order for this parameter to be effective.

11: St.Modulation Dly (Stereo Modulation Deley)

This stereo delay uses an LFO to sweep the delay time. The pitch also varies. You will obtain a delay sound with swell and shimmering. You can also control the delay time using a modulation source.

L Time (L Delay Time)	0...2.500sec (1.250sec)
Sets the left delay time	
R Time (R Delay Time)	0...2.500sec (1.250sec)
Sets the right delay time	
*LFO Speed	0.02...20.00Hz
Sets the LFO speed	
Dry:Wet	Dry, 1:99...99:1, Wet
Sets the balance between the effect and dry sounds	
*L Depth	0...200
Sets the depth of the left LFO modulation	
*R Depth	0...200
Sets the depth of the right LFO modulation	
LFO Wave (LFO Waveform)	Triangle, Sine
Selects LFO Waveform	
LFO Shape	–100...+100%
Determines how much the LFO waveform is changed	
L Fdback (L Feedback)	–100...+100%
Sets the feedback amount of left delay	
R Fdback (R Feedback)	–100...+100%
Sets the feedback amount of right delay	
L Phase (L LFO Phase)	–180...+180deg
Sets the phase obtained when the left LFO is reset	
R Phase (R LFO Phase)	–180...+180deg
Sets the phase obtained when the right LFO is reset	

: L LFO Phase [degree], : R LFO Phase [degree]
"L LFO Phase" and **"R LFO Phase"** specify the phase difference between the two LFO's when they are reset. This allows the pitch change of the sweep to be set independently for left and right.

12: St.Dynamic Delay (Stereo Dynamic Delay)

This stereo delay controls the level of delay according to the input signal level. You can use this as a ducking delay that applies delay to the sound only when you input signals at a high velocity or only when the volume level is low.

L Time (L Delay Time)	0...2.730sec (1.360sec)
Sets the left delay time	
R Time (R Delay Time)	0...2.730sec (1.360sec)
Sets the right delay time	
Feedback	–100...+100%
Sets the feedback amount	
Dry:Wet	Dry, 1:99...99:1, Wet
Sets the balance between the effect and dry sounds	
Threshold	0...100
Adjusts the level at which compression	
Attack	0...1.00sec
Sets the attack time of level control	
Release	0...10.0sec
Sets the release time of level control	
Offset	0...100%
Sets the offset of level control	
Control (Control Target)	None, WetLevel, Feedback
Selects from no control, output, and feedback	
LoDamp (Low Damp)	THRU, 21Hz...8.00kHz
Sets the damping amount in the low range	
HiDamp (High Damp)	53Hz...20.0kHz, THRU
Sets the damping amount in the high range	
Spread	0...100%
Sets the width of the stereo image of the effect sound	
Polarity	[+]Plus, [–]Minus
Reverses level control	

: Control Target
This parameter selects no level control, delay output control (effect balance), or feedback amount control.

: Polarity, : Threshold, : Offset, : Attack, : Release
The **"Offset"** parameter specifies the value for the **"Control Target"** parameter (when level control is not being applied), expressed as a ratio relative to the parameter setting.
If **"Polarity"** is set to **[+] Plus**, **"Control Target"** will be the value of the parameter multiplied by the **"Offset"** when the input signal is lower than the **"Threshold,"** or will be the value of the parameter when the input signal is above the **"Threshold."**
If **"Polarity"** is set to **[–] Minus**, **"Control Target"** will be the value of the parameter when the input signal is lower than the **"Threshold,"** or will be the value of the parameter multiplied by the **"Offset"** when the input signal is above the **"Threshold."**
The **"Attack"** and **"Release"** parameters specify attack time and release time of delay level control.

13: Auto Panning Delay

This stereo delay effect pans the delay sound left and right using the LFO.

L Time (L Delay Time)	0...2.730sec (1.360sec)
Sets the left delay time	
R Time (R Delay Time)	0...2.730sec (1.360sec)
Sets the right delay time	
*Speed (Panning Speed)	0.02...20.00Hz
Sets the panning speed	
Dry:Wet	Dry, 1:99...99:1, Wet
Sets the balance between the effect and dry sounds	
L Fdback (L Feedback)	–100...+100%
Sets the feedback amount for the left channel	
R Fdback (R Feedback)	–100...+100%
Sets the feedback amount for the right channel	
*Depth (Panning Depth)	0...100
Sets the panning width	
L-R Phase (LFO L-R Phase)	–180...+180deg
Sets the LFO phase difference between the left and right	
LoDamp (Low Damp)	THRU, 21Hz...8.00kHz
Sets the damping amount in the low range	
HiDamp (High Damp)	53Hz...20.0kHz, THRU
Sets the damping amount in the high range	
Waveform (LFO Waveform)	Triangle, Sine
Selects LFO Waveform	
LFO Shape	–100...+100%
Determines how much the LFO waveform is changed	

Category: Modulation
Modulation-type effects

14: Stereo Chorus

This effect adds thickness and warmth to the sound by modulating the delay time of the input signal. You can control the spaciousness of the sound by offsetting the phase of the left and right LFOs from each other.

*Speed (LFO Speed)	0.02...20.00Hz
	Sets the LFO speed
*Depth	0...100
	Sets the depth of LFO modulation
L-R Phase (LFO L-R Phase)	–180...+180deg
	Sets the LFO phase difference between the left and right
Dry:Wet	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds
L PreDly (L Pre Delay)	0.0...50.0msec
	Sets the left delay time
R PreDly (R Pre Delay)	0.0...50.0msec
	Sets the right delay time
Waveform (LFO Waveform)	Triangle, Sine
	Selects LFO Waveform
Spread	0...100%
	Sets the width of the stereo image of the effect sound
LoDamp (Low Damp)	THRU, 21Hz...8.00kHz
	Sets the damping amount in the low range
HiDamp (High Damp)	53Hz...20.0kHz, THRU
	Sets the damping amount in the high range

: L Pre Delay [msec], : R Pre Delay [msec]
Setting the left and right delay time individually allows you to control the stereo image.

15: Stereo Flanger

This effect gives a significant swell and movement of pitch to the sound. It is more effective when applied to a sound with a lot of harmonics. This is a stereo flanger. You can add spread to the sound by offsetting the phase of the left and right LFOs from each other.

*Speed (LFO Speed)	0.02...20.00Hz
	Sets the LFO speed
*Depth	0...100
	Sets the depth of LFO modulation
Fdback (Feedback)	–100...+100%
	Sets the feedback amount
Dry:Wet	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds
Waveform (LFO Waveform)	Triangle, Sine
	Selects LFO Waveform
LFO Shape (LFO Shape)	–100...+100%
	Determines how much the LFO waveform is changed
Fb HiCut (Feedback High Cut)	53Hz...20.0kHz, THRU
	Sets the feedback damping amount in the high range
L-R Phase (LFO L-R Phase)	–180...+180deg
	Sets the LFO phase difference between the left and right
Delay	0...50.0ms
	Sets the left/right delay time
LoDamp (Low Damp)	THRU, 21Hz...8.00kHz
	Sets the damping amount in the low range
HiDamp (High Damp)	53Hz...20.0kHz, THRU
	Sets the damping amount in the high range

: LFO Shape
Changing the LFO waveform shape controls the peak sweep of flanging effects.

: Feedback, : Dry:Wet
The peak shape of the positive and negative **"Feedback"** value is different. The harmonics will be emphasized when the effect sound is mixed with the dry sound if you set a positive value for both **"Feedback"** and **"Dry:Wet"**, and if you set a negative value for both **"Feedback"** and **"Dry:Wet"**.

: Feedback High Cut
This parameter sets the amount of damping of the feedback in the high range. Increasing the value will cut high-range harmonics.

16: Stereo Phaser

This effect creates a swell by shifting the phase. It is very effective on electric piano sounds. This is a stereo effect, and you can control the spaciousness of the sound by offsetting the phase of the left and right LFOs from each other.

*Speed (LFO Speed)	0.02...20.00Hz
	Sets the LFO speed
Depth	0...100
	Sets the depth of LFO modulation
Resonance	–100...+100%
	Sets the resonance amount
Dry:Wet	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds
Manual	0...100
	Sets the frequency to which the effect is applied
LFO Shape	–100...+100
	Determines how much the LFO waveform is changed
Reso HiCut (Resonance High Cut)	53Hz...20.0kHz, THRU
	Sets the resonance damping amount in the high range
L-R Phase (LFO L-R Phase)	–180...+180deg
	Sets the LFO phase difference between the left and right
Waveform (LFO Waveform)	Triangle, Sine
	Selects LFO Waveform
Type	Blue, U-VB
	Selects the type of phaser

: Resonance, : Dry:Wet
The peak shape of the positive and negative Feedback value is different. The harmonics will be emphasized when the effect sound is mixed with the dry sound, if you set a positive value for both **"Resonance"** and **"Dry:Wet"**, and if you set a negative value for both **"Resonance"** and **"Dry:Wet"**.

: Resonance High Cut
This parameter sets the amount of damping of the resonance in the high range. Increasing the value will cut high-range harmonics.

17: Stereo Vibrato

This effect cyclically varies the pitch of the input signal. You can use an envelope to control the width of the modulation.

*Speed (LFO Speed)	0.02...20.00Hz
	Sets the LFO speed
Depth	0...100
	Sets the depth of LFO modulation
Env.Control (Envelope Control)	0...100%
Sets the amount of depth that will be controlled by the envelope	
Dry:Wet	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds
Thresold	–48.0...0.0dB
Sets the level at which the envelope control effect will be applied	
Attack	0...1.00sec
	Sets the attack time for level control

Release	0...10.0sec
Sets the release time for level control	
L-R Phase (LFO L-R Phase)	–180...+180deg
Sets the LFO phase difference between the left and right	
Waveform (LFO Waveform)	Triangle, Sine
Selects LFO Waveform	
LFO Shape	–100...+100%
Determines how much the LFO waveform is changed	

18: Stereo Tremolo

This effect modulates the volume level of the input signal. The effect is stereo, and offsetting the LFO of the left and right phases from each other produces a tremolo effect between left and right.

*Speed (LFO Speed)	0.02...20.00Hz
Sets the LFO speed	
*Depth	0...100
Sets the depth of LFO modulation	
Waveform (LFO Waveform)	
Triangle, Sine, Square, Saw up, Saw down	
Selects LFO Waveform	
Dry:Wet	Dry, 1:99...99:1, Wet
Sets the balance between the effect and dry sounds	
LFO Shape	–100...+100%
Determines how much the LFO waveform is changed	
L-R Phase (LFO L-R Phase)	–180...+180deg
Sets the LFO phase difference between the left and right	

: LFO Waveform
This parameter selects the LFO waveform.

: LFO Phase
This parameter determines the difference between the left and right LFO phases. A higher value will simulate the auto-pan effect in which the sound is panned between left and right.

19: St.Pitch Shifter (Stereo Pitch Shifter)

This is a stereo pitch shifter.

PitchShift	–24...+24/2tone
Sets the pitch shift amount in steps of a semitone	
Fine	–100...+100cent
Sets the pitch shift amount in steps of one cent	
Lo/Hi Cut (Low/High Cut)	Lo:–50%..., Flat, ...Hi:–50%
Sets the damping amount in the low/high range	
Dry:Wet	Dry, 1:99...99:1, Wet
Sets the balance between the effect and dry sounds	
Feedback	–100...+100%
Sets the feedback amount	
L Time (L Delay Time)	0...1.360sec (680msec)
Sets the left delay time	
R Time (R Delay Time)	0...1.360sec (680msec)
Sets the right delay time	
Fb.Position (Feedback Position)	Pre (Pitch), Post (Dly)
Switches the feedback connection	
In Level (Input Level)	0...100%
Sets the input level to the effect	
Spread	–100...100%
Sets the width of the stereo image of the effect sound	

: Feedback Position, : Feedback
If **"Feedback Position"** is set to Pre (Pitch), the output of the pitch shifter will be fed back into the input of the pitch shifter; this means that by raising the **"Feedback"** value you can create an effect in which the pitch of the feedback continues to rise (or fall) each time the feedback delay is repeated.

If **"Feedback Position"** is set to **Post (Dly)**, the sound that is fed back will not be sent through the pitch shifter again; this means that if you raise the **"Feedback"** value, the pitch-shifted sound will repeat at that same pitch.

Category: Dynamics&Filter
Dynamics/Filter-type effects

20: Stereo Compressor

This effect compresses the input signal to regulate the level and give a "punchy" effect. This is a stereo compressor. You can link left and right channels, or use each channel separately.

Threshold	–30.0...0.0dB
Sets the level at which compression begins to apply	
Ratio	1.00:1...20.0:1
Sets the compression ration of the signal	
Attack	0...1.00sec
Sets the attack time	
Release	0...10.0sec
Sets the release time	
Env.Select (Envelope Select)	L/R Mix, L/R Indiv
Switches the left/right channels between linked or independent operation	
Responce	Slow, Medium, Fast
Selects the response speed	
Tube Sat (Tube Satulation)	0...100
Sets the depth of vacuum tube distortion	
Out Gain (Output Gain)	–24.0...+24.0dB
Adjusts the output level gain	

: Envelope Select
This parameter selects whether the left and right channels are linked to control both signals simultaneously, or whether each channel is controlled independently.

: Response
Adjusts the response speed at which the envelope is detected. Select the setting that is appropriate for the input material; choose **Fast** for brief sounds like percussion instruments, **Medium** for vocals, or **Slow** for long-sustaining sounds.

21: Stereo Expander

This effect attenuates input signals that are below a specified level, adding punch to the sound and improving the S/N ratio by reducing the level between performances.

Threshold	–48.0...0.0dB
Sets the level at which compression begins to apply	
Ratio	1.00:1...20.0:1
Sets the compression ration of the signal	
Attack	0...1.00sec
Sets the attack time	
Release	0...10.0sec
Sets the release time	
Env.Select (Envelope Select)	L/R Mix, L/R Indiv
Switches the left/right channels between linked or independent operation	
Responce	Slow, Medium, Fast
Selects the response speed	
Out Gain (Output Gain)	–24.0...+24.0dB
Adjusts the output level gain	

22: Stereo Limiter

This effect applies the Limiter to the low range, mid range, and high range of the input signal. You can control dynamics for each range to adjust the sound pressure of the low range, mid range, and high range in a different way from the EQ.

Threshold	–48.0...0.0dB
Sets the level at which compression begins to apply	
Attack	0...1.00sec
Sets the attack time	
Release	0...10.0sec
Sets the release time	
Out Gain (Output Gain)	–24.0...+24.0dB
Adjusts the output level gain	
Env.Select (Envelope Select)	L/R Mix, L/R Indiv
Switches the left/right channels between linked or independent operation	
Responce	Slow, Medium, Fast
Selects the response speed	
Tube Sat (Tube Satulation)	0...100
Sets the depth of vacuum tube distortion	

23: Stereo Gate

This effect lowers the level of input signals that are below a specified level.

Threshold	–48.0...0.0dB
Sets the level at which compression	
Attack	0...1.00sec
Sets the attack time	
Release	0...10.0sec
Sets the release time	
Range	–inf, –48...0.0dB
Compression level	
Env.Select (Envelope Select)	L/R Mix, L/R Indiv
Switches the left/right channels between linked or independent operation	
Responce	Slow, Medium, Fast
Selects the response speed	
PreDelay (Pre Delay Time)	0...200ms
Sets the delay time	
Out Gain (Output Gain)	–24.0...+24.0dB
Adjusts the output level gain	

: Pre Delay Time

This parameter sets the delay time of the Gate input. If the sound has a very fast attack, increase the delay time so that the signal will be input after the Gate is opened.

24: Stereo Filter

This is a filter with frequency control. It can be controlled by a envelope or LFO.

Fc Bottom (Control Fc Bottom)	53Hz...20.0kHz
Sets the lower limit of the frequency to be controlled	
Fc Top (Control Fc Top)	53Hz...20.0kHz
Sets the upper limit of the frequency to be controlled	
Resonance	0...100%
Sets the resonance amount	
Trim	0...100%
Adjusts the filter level	
FilterType	HPF, BPF, LPF
Selects the filter type	
Control (Control Source)	Envelope, LFO
Switches the control source	
Polarity	[+]Plus, [–]Minus
Inverts the control	
Dry:Wet	Dry, 1:99...99:1, Wet
Sets the balance between the effect and dry sounds	
Waveform (LFO Waveform)	Triangle, Sine, Saw
Selects LFO Waveform	
*LFO Speed	0.02...20.00Hz
Sets the LFO speed	
LFO Step	0...256
Selects the LFO step	
L-R Phase (LFO L-R Phase)	–180...+180deg
Sets the LFO phase difference between the left and right	
Env.Select (Envelope Select)	L/R Mix, L/R Indiv
Links or de-links the left/right channels for envelope control	
Env.Resp (Envelope Responce)	Slow, Medium, Fast
Selects the response speed of envelope control	
Env.Sens (Envelope Sensitivity)	0...100%
Sets the sensitivity of envelope control	

25: Stereo Wah

This is a wah effect that can be controlled by an envelope or LFO.

Control (Control Source)	Envelope, LFO, Manual
Switches the control source	
Env.Select (Envelope Select)	L/R Mix, L/R Indiv
Links or de-links the left/right channels for envelope control	
Env.Resp (Envelope Responce)	Slow, Medium, Fast
Selects the response speed of envelope control	
Env.Sens (Envelope Sensitivity)	0...100%
Sets the sensitivity of envelope control	
Waveform (LFO Waveform)	Triangle, Sine, Saw
Selects LFO Waveform	
*LFO Speed	0.02...20.00Hz
Sets the LFO speed	
LFO Step	0...256
Selects the LFO step	
LFO Phase (LFO L-R Phase)	–180...+180deg
Sets the LFO phase difference between the left and right	
Wah.Type (Wah Type)	Y-CRY, RM-A, RM-B, J-CRY, VOX, M-VOX
Selects the wah type	
*Manual (Manual Control)	0...100
Sets the control position manually	
DirectMix (Direct Mix Level)	0...100%
Adjusts the mix level of the direct sound	
Wah Level	0...100
Sets the wah level	

:Manual

By selecting **Manual** as the Control Source, you can create the effect of an actual wah pedal left in a fixed position. Alternatively, if you assign an expression pedal to control Manual, you can operate the expression pedal to control the sound just like an actual wah pedal.

26: Multiband Limiter

This is a stereo multi-band limiter. It is ideal for mastering.

Hi.Thresh (High Band Threshold)	–48.0...0.0dB
Adjusts the level at which compression begins for the high-frequency range	
Hi.Attack (High Band Attack)	0...1.00sec
Adjusts the attack time for the high-frequency range	
Hi.Release (High Band Release)	0...10.0sec
Adjusts the release time for the high-frequency range	
Hi.OutGain (High Band Output Gain)	–24.0...+24.0dB
Adjusts the output gain for the high-frequency range	
Md.Thresh (Middle Band Threshold)	–48.0...0.0dB
Adjusts the level at which compression begins for the mid-frequency range	
Md.Attack (Middle Band Attack)	0...1.00sec
Adjusts the attack time for the mid-frequency range	
Md.Release (Middle Band Release)	0...10.0sec
Adjusts the release time for the mid-frequency range	
Md.OutGain (Middle Band Output Gain)	–24.0...+24.0dB
Adjusts the output gain for the mid-frequency range	
Lo.Thresh (Low Band Threshold)	–48.0...0.0dB
Adjusts the level at which compression begins for the low-frequency range	
Lo.Attack (Low Band Attack)	0...1.00sec
Adjusts the attack time for the low-frequency range	
Lo.Release (Low Band Release)	0...10.0sec
Adjusts the release time for the low-frequency range	
Lo.OutGain (Low Band Output Gain)	–24.0...+24.0dB
Adjusts the output gain for the low-frequency range	
Mon.Band (Monitor Band)	Off, Low, Middle, High
Selects the band to monitor	
Lo.Xover (Low Cross over Frequency)	53Hz...1.00kHz
Sets the frequency of the crossover between the low and mid-frequency bands	
Hi.Xover (High Cross over Frequency)	1.10kHz...16.0kHz
Sets the frequency of the crossover between the mid and high-frequency bands	
Satulation (Tube Satulation)	0...100%
Sets the depth of vacuum tube distortion	

Category: Special Effect
Special Effect

27: St.Analog Record (Stereo Analog Record)

RPM	33 1/3, 45, 78
Sets the r.p.m. of a record	
Wah (Wah Flutter)	0...100%
Sets the depth by which the record is warped	
Bend	0...100%
Sets the width by which the record is warped	
Dry:Wet	Dry, 1:99...99:1, Wet
Sets the balance between the effect and dry sounds	
ClickLevel (Click Noise Level)	0...100%
Sets the level of click noise	
ClickAngle	0...100
Sets the angle of the scratch on the surface of the record	
LoDamp (Low Damp)	THRU, 21Hz...8.00kHz
Sets the damping amount in the low range	
HiDamp (High Damp)	53Hz...20.0kHz, THRU
Sets the damping amount in the high range	
ClickPoint	0...100
Sets the distance of the scratch from the warped area	
WhiteLevel (White Noise Level)	0...100%
Sets the level of white noise	
NoiseLoCut (Noise Low Cut)	THRU, 21Hz...8.00kHz
Sets the low-cut frequency for the noise	
NoiseHiCut (Noise High Cut)	53Hz...20.0kHz, THRU
Sets the high-cut frequency for the noise	
Vinyl Level (Vinyl Noise Level)	0...100%
Sets the level of noise produced by the needle scraping the vinyl	
Vinyl Type (Vinyl Noise Type)	0...3
Selects the type of vinyl noise	

ClickAngle:
This sets the angle of the scratch. The spacing of the click noise for one revolution will depend on the angle.

Vinyl Noise Type:
The Vinyl Noise will also depend on the amount by which the record is warped.

28: Talking Modulator

This effect gives the input signal a character similar to a human voice. It can create the impression of a talking guitar or synthesizer

V.Bottom (Voice Bottom)	[A], [E], [I], [O], [U]
Selects a vowel sound at the bottom end of control	
V.Centr (Voice Center)	[A], [E], [I], [O], [U]
Selects a vowel sound in the center of control	
V.Top (Voice Top)	[A], [E], [I], [O], [U]
Selects a vowel sound at the top end of control	
Drive (Drive Gain)	0.0...+36dB
Sets the amount of gain for the distortion	
Control (Control Source)	Envelope, LFO, Manual
Switches the control source	
*LFO Speed	0.02...20.00Hz
Sets the LFO speed	
Env.Resp (Envelope Responce)	Slow, Medium, Fast
Selects the response speed of envelope control	
Env.Sens (Envelope Sensitivity)	0...100%
Sets the sensitivity of envelope control	
L Delay (L Delay Time)	0...2.730sec (1.360sec)
Sets the left delay time	
R Delay (R Delay Time)	0...2.730sec (1.360sec)
Sets the right delay time	
*Manual (Manual Control)	0...100
Sets the control position manually	
Dry:Wet	Dry, 1:99...99:1, Wet
Sets the balance between the effect and dry sounds	
Wet Trim (Wet Level Trim)	0...100
Sets the effect level trim	

29: St.Ring Modulator (Stereo Ring Modulator)

This effect creates a metallic sound by applying the oscillators to the input signal.

Oscilator (Oscilator Frequency)	0...12.00kHz
Sets the oscillator frequency	
*LFO Speed	0.02...20.00Hz
Sets the LFO speed of the oscillator frequency modulation	
*LFO Depth	0...100%
Sets the depth of LFO modulation for the oscillator frequency	

L-R Phase (LFO L-R Phase)	–180...+180deg
Sets the LFO phase difference between the left and right	
L Delay (L Delay Time)	0...2.730sec (1.360sec)
Sets the left delay time	
R Delay (R Delay Time)	0...2.730sec (1.360sec)
Sets the right delay time	
HiDamp (High Damp)	53Hz...20.0kHz, THRU
Sets the damping amount in the high range	
L Fdback (L Feedback)	–100...+100%
Sets the feedback amount for the left channel	
R Fdback (R Feedback)	–100...+100%
Sets the feedback amount for the right channel	
Dry:Wet	Dry, 1:99...99:1, Wet
Sets the balance between the effect and dry sounds	
In Level (Input Level)	0...100%
Sets the input level to the effect	

: Oscillator Frequency [Hz]
This parameter sets the oscillator frequency.

30: Rotary Speaker

This effect simulates a rotary speaker, and obtains a more realistic sound by simulating the rotor in the low range and the horn in the high range separately. The effect also simulates the stereo microphone settings.

Speed Sw (Speed Switch)	Slow, Fast
Switches the speaker rotation speed between slow and fast	
HornRatio (Horn Ratio)	Stop, 0.50...2.00
Adjusts the (high-range side) horn rotation speed. Standard value is 1.00. Selecting "Stop" will stop the rotation	
RotorRatio (Rotor Ratio)	Stop, 0.50...2.00
Adjusts the (low-range side) rotor rotation speed. Standard value is 1.00. Selecting "Stop" will stop the rotation	
Rotor:Horn (Horn:Rotor Balance)	Rotor, 1:99...99:1, Horn
Sets the level balance between the high-range horn and low-range rotor	
Rotate Sw (Rotate Switch)	Rotate, Stop
Switches between speaker rotation and stop	
HrnAccel (Horn Acceleration)	0...100
How quickly the horn rotation speed in the high range is switched	
RtrAccel (Rotor Acceleration)	0...100
Determines how quickly the rotor rotation speed in the low range is switched	
MicDistance	0...100
Sets the distance between the microphone and rotary speaker	
MicSpread	0...100%
Sets the angle of left and right microphones	
Dry:Wet	Dry, 1:99...99:1, Wet
Sets the balance between the effect and dry sounds	

: Horn Acceleration, : Rotor Acceleration
On a real rotary speaker, the rotation speed is accelerated or decelerated gradually after you switch the speed. The **"Horn Acceleration"** parameter sets the speed at which the rotation is accelerated or decelerated.

: MicDistance, : MicSpread
This is a simulation of stereo microphone settings.

Monaural type effects

MONO TYPE

Category	No.	Name	Size
Reverb&Delay	31	Mono Reverb Hall	1
	32	Mono Reverb Plate	1
	33	Mono Reverb Room	1
	34	Mono ER	1
	35	Mono Delay	1
	36	Mn.Multitap Delay	1
Modulation&Pitch	37	Mono Chorus	1
	38	Mono Flanger	1
	39	Mono Phaser	1
	40	Mono Tremolo	1
	41	Mn.Pitch Shifter	1
Dynamics&Filter	42	Mono Compressor	1
	43	Mono Limiter	1
	44	Mono Expander	1
	45	Mono Gate	1
	46	Mono Filter	1
	47	Mono Wah	1
SFX&Etc	48	AnalogRecord	1
	49	Mn.Ring Modulator	1
	50	Tube Pre Amp Sim	1
	51	Mic Simulator	2
Multi	52	GuitarMulti	8

Category: Reverb&Delay
Reverb/delay-type effects

31: Mono Reverb Hall

32: Mono Reverb Plate

Rev Time (Reverb Time)	0.1...10.0sec
Sets the reverberation time	
LoDamp (Low Damp)	THRU, 21Hz...8.00kHz
Sets the damping amount in the low range	
HiDamp (High Damp)	53Hz...20.0kHz, THRU
Sets the damping amount in the high range	
Dry:Wet	Dry, 1:99...99:1, Wet
Sets the balance between the effect and dry sounds	
SideRflct (Side Reflection)	0...100%
Sets the amount of reflections from the side walls	
BackRflct (Back Reflection)	0...100%
Sets the amount of reflection from the back wall	

33: Mono Reverb Room

Rev Time (Reverb Time)	0.1...3.0sec
Sets the reverberation time	
LoDamp (Low Damp)	THRU, 21Hz...8.00kHz
Sets the damping amount in the low range	
HiDamp (High Damp)	53Hz...20.0kHz, THRU
Sets the damping amount in the high range	
Dry:Wet	Dry, 1:99...99:1, Wet
Sets the balance between the effect and dry sounds	
SideRflct (Side Reflection)	0...100%
Sets the amount of reflections from the side walls	
BackRflct (Back Reflection)	0...100%
Sets the amount of reflection from the back wall	

34: Mono ER

Type	Sharp, Loose, Modulated, Reverse
	Selects the decay curve for the early reflection
ER Time	10...800msec
	Sets the time length of early reflection
Predly (Pre Delay)	0...200msec
	Sets the time taken from the original sound to the first early reflection
Dry:Wet	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds
LoDamp (Low Damp)	THRU, 21Hz...8.00kHz
	Sets the damping amount in the low range
HiDamp (High Damp)	53Hz...20.0kHz, THRU
	Sets the damping amount in the high range

35: Mono Delay

Time (Delay Time)	0...2.730sec (1.360sec)
	Sets the delay time
Feedback (Feedback)	–100...+100%
	Sets the feedback amount
In Level (Input Level)	0...100%
	Sets the input level to the effect
Dry:Wet	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds
LoDamp (Low Damp)	THRU, 21Hz...8.00kHz
	Sets the damping amount in the low range
HiDamp (High Damp)	53Hz...20.0kHz, THRU
	Sets the damping amount in the high range
Analog (Analog Satulation)	0...100%
	Sets the amount of analog distortion

36: Mn.Multitap Delay (Mono Multitap Delay)

Tap1Time	0...2.730sec (1.360sec)
	Sets the delay time of Tap1
Tap2Time	0...2.730sec (1.360sec)
	Sets the delay time of Tap2
Tap3Time	0...2.730sec (1.360sec)
	Sets the delay time of Tap3
WetLevel	0...100%
	Sets the level of the effect sound
Tap1Level	0...100%
	Sets the output level of Tap1
Tap2Level	0...100%
	Sets the output level of Tap2
Tap3Level	0...100%
	Sets the output level of Tap3
DryLevel	0...100%
	Sets the level of the direct sound
LoDamp (Low Damp)	THRU, 21Hz...8.00kHz
	Sets the damping amount in the low range
HiDamp (High Damp)	53Hz...20.0kHz, THRU
	Sets the damping amount in the high range

Category: Modulation
Modulation-type effects

37: Mono Chorus

*Speed (LFO Speed)	0.02...20.00Hz
	Sets the LFO speed
*Depth	0...100
	Sets the depth of LFO modulation
PreDly (Pre Delay)	0.0...50.0msec
	Sets the delay time
Dry:Wet	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds
Waveform (LFO Waveform)	Triangle, Sine
	Selects LFO Waveform
LoDamp (Low Damp)	THRU, 21Hz...8.00kHz
	Sets the damping amount in the low range
HiDamp (High Damp)	53Hz...20.0kHz, THRU
	Sets the damping amount in the high range
Waveform (LFO Waveform)	Triangle, Sine
	Selects LFO Waveform
Analog (Analog Satulation)	0...100%
	Sets the amount of analog distortion

38: Mono Flanger

*Speed (LFO Speed)	0.02...20.00Hz
	Sets the LFO speed
*Depth	0...100
	Sets the depth of LFO modulation
Feedback	–100...+100%
	Sets the feedback amount
Dry:Wet	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds
Waveform (LFO Waveform)	Triangle, Sine
	Selects LFO Waveform
LFO Shape	–100...+100%
	Determines how much the LFO waveform is changed
Fb HiCut (Feedback High Cut)	53Hz...20.0kHz, THRU
	Sets the damping amount in the high range
Delay	0...50.0ms
	Sets the left/right delay time
LoDamp (Low Damp)	THRU, 21Hz...8.00kHz
	Sets the damping amount in the low range
HiDamp (High Damp)	53Hz...20.0kHz, THRU
	Sets the damping amount in the high range

39: Mono Phaser

*Speed (LFO Speed)	0.02...20.00Hz
	Sets the LFO speed
Depth	0...100
	Sets the depth of LFO modulation
Resonance	–100...+100%
	Sets the resonance amount
Dry:Wet	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds
Manual	0...100
	Sets the frequency to which the effect is applied
LFO Shape	–100...+100
	Determines how much the LFO waveform is changed

Reso HiCut (Resonance High Cut)	53Hz...20.0kHz, THRU
Sets the resonance damping amount in the high range	
Type	Blue, U-VB
Selects the type of phaser	
Waveform (LFO Waveform)	Triangle, Sine
Selects LFO Waveform	

40: Mono Tremolo

*Speed (LFO Speed)	0.02...20.00Hz
Sets the LFO speed	
*Depth	0...100
Sets the depth of LFO modulation	
Waveform (LFO Waveform)	
Triangle, Sine, Square, Saw up, Saw down	
Selects LFO Waveform	
Dry:Wet	Dry, 1:99...99:1, Wet
Sets the balance between the effect and dry sounds	
LFO Shape	–100...+100%
Determines how much the LFO waveform is changed	

41: Mn.Pitch Shifter (Mono Pitch Shifter)

PitchShift	–24...+24/2tone
Sets the pitch shift amount in steps of a semitone	
Fine	–100...+100cent
Sets the pitch shift amount in steps of one cent	
Lo/Hi Cut (Low/High Cut)	Lo:-50%..., Flat, ...Hi:-50%
Sets the damping amount in the low/high range	
Dry:Wet	Dry, 1:99...99:1, Wet
Sets the balance between the effect and dry sounds	
Feedback	–100...+100%
Sets the feedback amount	
In Level (Input Level)	0...100%
Sets the input level to the effect	

Category: Dynamics&Filter Dynamics/Filter-type effects

42: Mono Compressor

Threshold	–30.0...0.0dB
Sets the level at which compression begins to apply	
Ratio	1.00:1...20.0:1
Sets the compression ration of the signal	
Attack	0...1.00sec
Sets the attack time	
Release	0...10.0sec
Sets the release time	
Responce	Slow, Medium, Fast
Selects the response speed	
Tube Sat (Tube Satulation)	0...100
Sets the depth of vacuum tube distortion	
Out Gain (Output Gain)	–24.0...+24.0dB
Adjusts the output level gain	

43: Mono Expander

Threshold	–48.0...0.0dB
Sets the level at which compression begins to apply	
Ratio	1.00:1...20.0:1
Sets the compression ration of the signal	
Attack	0...1.00sec
Sets the attack time	
Release	0...10.0sec
Sets the release time	
Responce	Slow, Medium, Fast
Selects the response speed	
Out Gain (Output Gain)	–24.0...+24.0dB
Adjusts the output level gain	

44: Mono Limiter

Threshold	–48.0...0.0dB
Sets the level at which compression begins to apply	
Attack	0...1.00sec
Sets the attack time	
Release	0...10.0sec
Sets the release time	
Out Gain (Output Gain)	–24.0...+24.0dB
Adjusts the output level gain	
Responce	Slow, Medium, Fast
Selects the response speed	
Tube Sat (Tube Satulation)	0...100
Sets the depth of vacuum tube distortion	

45: Mono Gate

Threshold	–48.0...0.0dB
Adjusts the level at which compression	
Attack	0...1.00sec
Sets the attack time	
Release	0...10.0sec
Sets the release time	
Range	–inf, –48...0.0dB
Compression level	
Responce	Slow, Medium, Fast
Selects the response speed	
PreDelay (Pre Delay Time)	0...200ms
Sets the delay time	
Out Gain (Output Gain)	–24.0...+24.0dB
Adjusts the output level gain	

46: Mono Filter

Fc Bottom (Control Fc Bottom)	53Hz...20.0kHz
Sets the lower limit of the frequency to be controlled	
Fc Top (Control Fc Top)	53Hz...20.0kHz
Sets the upper limit of the frequency to be controlled	
Resonance	0...100%
Sets the resonance amount	
Trim	0...100%
Adjusts the filter level	
FilterType	HPF, BPF, LPF
Selects the filter type	
Control (Control Source)	Envelope, LFO
Switches the control source	
Polarity	[+]Plus, [–]Minus
Inverts the control	

Dry:Wet	Dry, 1:99...99:1, Wet
Sets the balance between the effect and dry sounds	
Waveform (LFO Waveform)	Triangle, Sine, Saw
Selects LFO Waveform	
LFO Speed	0.02...20.00Hz
Sets the LFO speed	
LFO Step	0...256
Selects the LFO step	
Env.Resp (Envelope Responce)	Slow, Medium, Fast
Selects the response speed of envelope control	
Env.Sens (Envelope Sensitivity)	0...100%
Sets the sensitivity of envelope control	

47: Mono Wah

Control (Control Source)	Envelope, LFO, Manual
Switches the control source	
Wah.Type	Y-CRY, RM-A, RM-B, J-CRY, VOX, M-VOX
Selects the wah type	
Env.Resp (Envelope Responce)	Slow, Mediumd, Fast
Selects the response speed of envelope control	
Env.Sens (Envelope Sensitivity)	0...100%
Sets the sensitivity of envelope control	
Waveform (LFO Waveform)	Triangle, Sine, Saw
Selects LFO Waveform	
*LFO Speed	0.02...20.00Hz
Sets the LFO speed	
LFO Step	0...256
Selects the LFO step	
*Manual (Manual Control)	0...100
Sets the control position manually	
DirectMix (Direct Mix Level)	0...100%
Adjusts the mix level of the direct sound	
Wah Level	0...100
Sets the wah level	

Category: Special Effect
Special Effect

48: Mn.Analog Record (Mono Analog Record)

RPM	33 1/3, 45, 78
Sets the r.p.m. of a record	
Wah (Wah Flutter)	0...100%
Sets the depth by which the record is warped	
Bend	0...100%
Sets the width by which the record is warped	
Dry:Wet	Dry, 1:99...99:1, Wet
Sets the balance between the effect and dry sounds	
ClickLevel (Click Noise Level)	0...100%
Sets the level of click noise	
ClickAngle (Click Angle)	0...100
Sets the angle of the scratch on the surface of the record	
LoDamp (Low Damp)	THRU, 21Hz...8.00kHz
Sets the damping amount in the low range	
HiDamp (High Damp)	53Hz...20.0kHz, THRU
Sets the damping amount in the high range	
ClickPoint	0...100
Sets the distance of the scratch from the warped area	
WhiteLevel (White Noise Level)	0...100%
Sets the level of white noise	
NoiseLoCut (Noise Low Cut)	THRU, 21Hz...8.00kHz
Sets the low-cut frequency for the noise	
NoiseHiCut (Noise High Cut)	53Hz...20.0kHz, THRU
Sets the high-cut frequency for the noise	

49: Mn.Ring Modulator (Mono Ring Modulator)

Oscilator (Oscilator Frequency)	0...12.00kHz
Sets the oscillator frequency	
*LFO Speed	0.02...20.00Hz
Sets the LFO speed of the oscillator frequency modulation	
*LFO Depth	0...100%
Sets the depth of LFO modulation for the oscillator frequency	
Dry:Wet	Dry, 1:99...99:1, Wet
Sets the balance between the effect and dry sounds	
Delay (Delay Time)	0...2.730sec (1.360sec)
Sets the delay time	
Feedback	–100...+100%
Sets the feedback amount	
HiDamp (High Damp)	53Hz...20.0kHz, THRU
Sets the damping amount in the high range	
In Level (Input Level)	0...100%
Sets the input level to the effect	

50: Tube Pre Amp Sim (Tube PreAmp Simulator)

This effect simulates a vacuum tube preamp. You can make independent settings for two vacuum tubes connected in series, producing a distinctive and warm sound.

Tube1.Gain	–24.0...+24.0dB
Sets the gain of tube circuit 1	
Tube1.Sat (Tube1 Satulation)	0...100%
Sets the amount of saturation for tube circuit 1	
Tube2.Gain	–24.0...+24.0dB
Sets the gain of tube circuit 2	
Tube2.Sat (Tube2 Satulation)	0...100%
Sets the amount of saturation for tube circuit 2	
Tb1.LoCut (Tube1 Low Cut)	THRU, 21Hz...8.00kHz
Sets the amount of low-frequency attenuation for tube circuit 1	
Tb1.HiCut (Tube1 High Cut)	53Hz...20.0kHz, THRU
Sets the amount of high-frequency attenuation for tube circuit 1	
Tb2.LoCut (Tube2 Low Cut)	THRU, 21Hz...8.00kHz
Sets the amount of low-frequency attenuation for tube circuit 2	
Tb2.HiCut (Tube2 High Cut)	53Hz...20.0kHz, THRU
Sets the amount of high-frequency attenuation for tube circuit 2	
Tube1Bias	0...100%
Sets the bias for tube circuit 1	
Tb1.Phase (Tube1 Phase)	Normal, Inverted
Sets the output phase of tube circuit 1	
Tube2Bias	0...100%
Sets the bias for tube circuit 2	
Out Level (Output Level)	–48.0...0.0dB
Sets the output level	

51: Mic Simulator

This effect simulates a wide variety of microphones. You can also adjust the preamp.

MicType (Microphone Type)	Vntg.Dy, Multi.Cn, Prcs.Cn, Whale, Vo.Cn, Vo.Tube, BDr.Dy
	Selects the type of mic
MicPosition (Microphone Position)	Close, On, Off, Far
	Selects the position of the mic
PreAmp G (Pre Amp Gain)	–24.0...+24.0dB
	Sets the gain of the tube preamp
TubeSat (Tube Satulation)	0...100%
	Sets the amount of tube saturation
TubeBias	0...100
	Vacuum tube bias adjustment amount
LowCut	THRU, 21Hz...8.00kHz
	Sets the damping amount in the low range
HiCut (High Cut)	53Hz...20.0kHz, THRU
	Sets the damping amount in the high range
OutLevel (Outpur Level)	–48.0...00dB
	Sets the output level

Category: Multi Effect
Multi Effect

52: GuitarMulti

This is a multi-chain effect for guitar.

Chain: [Wah]-[Comp]-[Mod]-[Amp]-[Dly]

Parameters for the effects in the chain

Wah (Wah Wah)

Control (Control Source)	Envelope, Manual
	Switches the control source
Wah.Type	Y-CRY, RM-A, RM-B, J-CRY, VOX, M-VOX
	Selects the wah type
Env.Resp (Envelope Responce)	Slow, Medium, Fast
	Selects the response speed of envelope control
Env.Sens (Envelope Sensitivity)	0...100%
	Sets the sensitivity of envelope control
*Manual (Manual Control)	0...100
	Sets the control position manually
DirectMix (Direct Mix Level)	0...100%
	Adjusts the mix level of the direct sound
Wah Level	0...100
	Sets the wah level

Comp (Compressor)

Threshold	–48.0...0.0dB
	Sets the level at which compression begins to apply
Attack	0...1.00sec
	Sets the attack time
OutGain (Output Gain)	–24.0...+24.0dB
	Adjusts the output level gain

Mod (Modulation)

ModType (Modulation Type)	Chorus, Flanger, Tremolo
	Selects the modulation type
Speed (LFO Speed)	0.02...20.00Hz
	Sets the LFO speed
Shape (LFO Shape)	–100...+100%
	Determines how much the LFO waveform is changed
Depth	0...100
	Sets the depth of LFO modulation

Amp (AmpCabModeling)

This effect models a guitar amp cabinet.

AmpType (AmpType)	AC15, AC30, AC30TB, BLK2x12, TWD1x12, TWD4x10, BTQ CL, BTQ OD, UKBUES, UK'70S, UK'80S, UK'90S, UK MDN, RECTO, US HI-G
	Selects the type of amplifier
DRIVE (Drive Level)	1...100
	Sets the amount of distortion
VOLUME (Volume Level)	1...100
	Sets the volume level
CabType (CabinetType)	1x12TWD, 2x10BLK, 2x12BLK, 1x12VOX, 2x12VOX, 4x10TWD, , AD412, UK-H30, UK-T75, US-V30, OFF
	Selects the type of cabinet
BASS	0...100
	Sets the low-frequency level
MIDDLE	0...100
	Sets the mid-frequency level
TREBLE	0...100
	Sets the high-frequency level
PRESENCE	0...100
	Sets the level of the high region
NR.Thrsh (NoiseReduction Threshold)	0...100
	Level at which noise reduction begins to apply

Dly (Long Delay)

Time (Delay Time)	0...10.365sec (1.360sec)
	Sets the delay time
Feedback	–100...+100%
	Sets the feedback amount
In Level (Input Level)	0...100%
	Sets the input level to the effect
Dry:Wet	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds
LoDamp (Low Damp)	THRU, 21Hz...8.00kHz
	Sets the damping amount in the low range
HiDamp (High Damp)	53Hz...20.0kHz, THRU
	Sets the damping amount in the high range

Appendices

Troubleshooting

Power does not turn on

☐ Is the power cable connected to an outlet? (→p.1)

☐ Is the rear panel POWER ON (power supply) switch turned on? (→p.1)

Nothing appears in the display

☐ Is the top panel power on key lit? (→p.1)

☐ Is the contrast adjusted correctly? (→p.9)

Vertical lines are visible in the display

☐ Depending on the content of the display, vertical lines may be visible in the display, but this is not a malfunction.
→ If the screen is difficult to read, adjust the contrast and angle (→p.9).

TouchView response is poor

☐ Press the **SYSTEM** key, and use the **"Control"** tab page item **"Touch Panel Calibration"** to calibrate the touch panel (→p.95).

No sound

☐ Is the power of the D32XD/D16XD or a connected device turned off? (→p.1)

☐ Is the **MASTER** fader, **MONITOR LEVEL** knob, or **PHONES 1**, **2 VOLUME** knobs set to low?

☐ Is the channel volume level set to low?
The actual volume level may not match the fader positions if pairing has been used and then switched off, or after automation has been used.
→ Go to the **MIXER**, **FADER/PAN/AUTOMATION**, **"Fader Pan"** tab page, and raise and lower the fader to match the fader position to the actual volume. Then adjust the fader to an appropriate level.

☐ Is the Solo function activated?
→ If Solo is being used, you will not hear channels that are not being soloed.

Can't hear the playback

☐ If the **REC/PLAY** key set to PLAY? (→p.8)

☐ Is the **CH ON** key turned on? (→p.9)

☐ Has solo been turned on, so that other tracks are not heard? (→p.9, 97)

☐ If you have selected Cue, could the cue level of the channels be lowered?
→ Access the **MIXER**, **SOLO/MONITOR**, **"CueLevel"** tab page and raise the cue level. (→p.51)

☐ Is **CD Monitor** set to on? (→p.123)

☐ Is the **1–16/17–32** key set correctly? (→p.9)

Input sound is inaudible or too soft

☐ Is the **TRIM** knob raised to an appropriate level?

☐ After connecting your audio source to an input jack, did you assign it to a mixer channel?
→ In the **MIXER**, **INPUT/OUTPUT/CH ASSIGN**, **"Ch Assign"** tab page, assign the source to a mixer channel. (→p.42)

☐ Verify that audio is being input.
→ Press the **METER** key, and in **"Meter Trk View,"** set **"Select Level Meter Position"** to **"CH-Input."** Watch the meters to verify that audio is being input to each mixer channel (→p.42).

☐ Are you using the analog compressor? (→p.46)

☐ Is the **REC/PLAY** key set to REC? (→p.8)

☐ Are the monitor settings appropriate?
→ In the **MIXER**, **SOLO/MONITOR**, **"Monitor"** tab page, select the signal that you want to monitor (normally, turn **"MasterLR"** On). If you have turned **"Rhythm"** or **"Cue"** "On," raise their volume levels. (→p.50)

☐ Is the **CH ON** key turned on? (→p.9)

☐ Is the **PAD** key on?

☐ Are you using INPUT1 and GUITAR IN simultaneously?
→ INPUT1 and GUITAR IN are shared. If a guitar is connected to GUITAR IN, you cannot use INPUT1.

☐ If cue is selected, the cue level of each channel may have been lowered.
→ In the **MIXER**, **SOLO/MONITOR**, **"CueLevel"** tab page. (→p.51)

☐ Is the **1–16/17–32** key set correctly? (→p.9)

Can't hear an audio CD inserted in the CD-R/RW drive

☐ Is the output of the internal CD-R/RW drive correctly assigned to the mixer channels?
→ Go to the **MIXER**, **INPUT/OUTPUT/CH ASSIGN**, **"Ch Assign"** tab page, and assign the CD output to the appropriate mixer channels.

☐ Was the D32XD/D16XD subjected to vibration or impact?
The D32XD/D16XD's CD-R/RW drive is a removable drive.
→ Verify that the CD-R/RW drive is installed correctly. (→p.181 "Checking the internal CD-R/RW drive")

Can't hear sound other than the audio CD

☐ Is the **CD**, **CD PLAYER CD Monitor** button on?
→ If the **CD Monitor** button is on, all sounds other than the internal CD drive will be muted. Turn this button off except when you want to use the internal CD drive to monitor an audio CD. (→p.123)

No sound from AUX OUT]

"Can't apply external effect (AUX OUT)" (→p.168)

Can't hear rhythm sound

"Rhythm sound is not output" (→p.168)

Can't hear scrub playback

☐ The incorrect track may be selected in the scrub page.
→ Select the correct track.

Channel fader or EQ does not work

Fader does not work

☐ When pairing is on, the even-numbered faders of channels 1–32 [*1–16] will not function.
The audio level of paired channels is controlled by the fader of the odd-numbered channel at the left.

☐ If you switch pairing off after channels were paired, or if you recall a scene, the audio level of a channel may not match the position of the fader.
→ Raise or lower the fader so that it matches the actual volume level.

Can't record

☐ Are the D32XD/D16XD's channel fader(s) lowered?

☐ Is the recording-destination track's **REC/PLAY** key set to REC?

☐ Is the **CH ON** key turned on? (→p.9)

☐ Is there enough space on the drive?
→ Set the counter display to "FreeTime," and check the available recording time. (→p.38, 96)
→ Increase the free space on the song drive by deleting unwanted songs or songs you have already backed up. (→p.41, 82)

☐ Is the input source you want to record assigned to a mixer channel?
→ In the **MIXER**, **INPUT/OUTPUT/CH ASSIGN**, **"Ch Assign"** tab page, assign the input source to a mixer channel. (→p.42)

☐ Is the REC/PLAY MODE appropriate? (→p.64, 150)

Can't use digital input

☐ If you want to use S/P DIF input, access the **MIXER**, **INPUT/OUTPUT/CH ASSIGN**, **"Ch Assign"** tab page, and set **"Source select"** to **"S/P DIF."** Then specify digital input as the input for the channel you want to assign (→p.43).

☐ Is the S/P DIF input format incorrect?
→ Connect an instrument or digital audio device that complies with the S/P DIF format.

☐ Do the sampling frequency and bit depth of the current song match that of the input?

Can't use digital output

☐ Is the ADAT output assignment appropriate?
→ Make the appropriate ADAT output assignment (→p.47).

Playback level is lower than the level during recording

☐ If you lowered the attenuator during recording while using the input EQ, could you have forgotten to reset the attenuator for playback?

☐ Have you set the recording level to PST (post-fader) during recording, recorded at a level below unity gain, and then played back with these same settings?
→ If you want to play back at the recorded level, set the channel fader to unity gain.

The input or recorded sound is noisy or distorted

☐ Is the **TRIM** knob set appropriately? The sound will be distorted if the **TRIM** knob is set too high, and there will be more noise if it is set too low.
→ To optimally set the **TRIM** knobs of the INPUT 1–INPUT 8 jacks (INPUT 1– INPUT 16 jacks if the optional board is installed), press the **METER** key to access **"Meter Trk View,"** and set **"Select Level Meter Position"** to **"CH-Input."** Then adjust the TRIM knobs as high as possible without allowing the **"CLP"** indicator to appear in the level meter.

☐ Are you using effects?
→ Some effects add distortion or noise. Verify that there is no distortion or noise when you are not using an effect.

☐ If the effect input or output is still distorted, make the following adjustments.

→ **Input**

Insert effect:
While you watch the meters in the **EFFECT "Insert-EFF"** tab page, use the **TRIM** knob to adjust the input volume so that **"CLP"** does not light.

Master effect:
While you watch the meters in the **MIXER**, **SEND (EFF/AUX [*/REC])**, **"EFF1Send"/"EFF2Send"** tab page, adjust the send volume so that **"CLP"** does not light.

Final effect:
While you watch the meters in the **EFFECT**, **"Final-EFF"** tab page, adjust the volume of each channel so that **"CLP"** does not light.

→ **Output**

Insert effect:
Adjust the effect parameters or **TRIM** knob, and listen for any distortion.

Master/final effect:
While you watch the meters in the **EFFECT**, **"Master-EFF"/"FinalEFF"** tab page, adjust the effect parameters so that **"CLP"** does not light.

☐ If the sound is distorting in the EQ, make the following adjustments.
→ Adjust the EQ gain values (→p.48).
→ Adjust the attenuator (→p.48).

☐ Could you be using the analog compressor?
→ Adjust the compressor parameters. (→p.46)

☐ Did you use Cue during or after recording?
→ Make sure that the channel fader and channel Cue level are not both raised (→p.51).

Effects do not apply

☐ You may have selected effect program number 00.
→ Set **"EffectNumber"** to other than "**000**" (=NO EFFECT).

Insert effects do not apply

☐ Is the effect inserted at the appropriate location?
→ In the **EFFECT**, **"Routing A/Routing B [*EFFRouting]"** tab page, select **"IN"** if you want to apply the insert effect to the input, or **"TR"** if you want to apply it to the playback. (→p.58)
→ Go to the **EFFECT**, **"Routing A/Routing B [*EFFRouting]"** tab page and verify that the effect assign channel (track) is correct. (→p.24)

Can't apply master effects

☐ Is the send level from each channel set to zero or nearly zero?
→ Raise the send levels in the **MIXER**, **SEND (EFF/AUX [*/REC])**, **"EFF1Send"/"EFF2Send"** tab pages.

☐ Is the return level set to zero or nearly zero?
→ Go to the **EFFECT**, **"MasterEFF"** tab page, and raise the **"Return Level"** setting.

☐ If you are monitoring the sound from the **MONITOR OUT L/R** jacks, the monitor LR bus output may be turned off.
→ In the **MIXER**, **SOLO/MONITOR**, **"Monitor"** tab page, press the MasterLR button to turn it "On."

Can't apply the final effect

☐ If you are monitoring the sound from the **MONITOR OUT L/R** jacks, the master LR bus output may be turned off.
→ In the **MIXER**, **SOLO/MONITOR**, **"Monitor"** tab page, press the **MasterLR** button to turn it "On."

Can't use the expression pedal or MIDI to control an effect

☐ In the **SYSTEM**, **"Control"** tab page, is the effect selected by **"Control Change Assign"** enabled?
→ Go to the **EFFECT**, **"Routing A/Routing B [*EFFRouting]"** tab page and verify that the effect is enabled.

☐ Are you using the correct device to control the effect?
→ Control the effect using the device specified by the **"Control Change Device"** setting in the **SYSTEM**, **"Control"** tab page. (→p.126)

☐ Is the selected effect set to effect program number **"000"** (=NO EFFECT) or to an effect program number that does not include a control function?

☐ If you are controlling via MIDI, does the MIDI channel number of the D32XD/D16XD match the MIDI channel of the transmitting MIDI device? (→p.131)

☐ Is the effect program's **Ctrl** setting turned on? (→p.121)

Can't apply external effect (AUX OUT)

☐ Is the external send level setting set to zero or nearly zero?
→ Go to the **MIXER**, **SEND (EFF/AUX [*/REC])**, **"AUX1 Send"/"AUX2 Send"** tab page, and raise the external send level.

☐ Is the output of your external effect connected to the INPUT 1–INPUT 8 jacks (INPUT 1–INPUT 16 jacks if the optional board is installed), and input to the mixer channels?
→ Go to the **MIXER**, **INPUT/OUTPUT/CH ASSIGN**, **"Ch Assign"** tab page and make the appropriate assignments.

☐ Have sub input settings been made correctly? (→p.45, 101)

Rhythm

Rhythm sound is not output

☐ In the **TEMPO**, **"SetUp"** tab page, could the **Rhythm On** button be turned off?
→ Turn on the **Rhythm On** button.

☐ Is the rhythm assign setting appropriate?
→ If the rhythm is assigned to a **CH Input**, input the rhythm to a mixer channel.

☐ Is the recorder stopped?
→ Press the **PLAY** key to play back. The rhythm will sound while the recorder is recording or playing,
If you want to preview the rhythm while the recorder is stopped, go to the **TEMPO**, **"SetUp"** tab page and turn the **Prev** button on.

☐ You may have selected a silent rhythm pattern.

☐ The rhythm volume may be too low.
→ In the **TEMPO**, **"SetUp"** tab page, use **"Vol."** to adjust the volume.

Can't hear the rhythm

☐ Is the **Rhythm On** button off? (→p.61)

☐ Is rhythm assign set to **"Monitor"** or **"Master"**?

Can't select rhythm

☐ Could a 96 kHz/24-bit song be selected?
→ For a 96 kHz/24-bit song you can select only Metro, Hihat, and Blank.

A key does not function when pressed

☐ Some keys do not function while the recorder is playing or recording.
→ Stop the recorder, and then perform the operation.

☐ Some keys do not function while Scrub is on.
→ Turn off Scrub, and then perform the operation. (→p.40, 148)

☐ Is a dialog box open?
→ Press either the **Yes**, **No** button to close the dialog box.

Can't edit PAN, EQ, or SEND

☐ When pairing is on, you cannot edit even-numbered channels 1–32 [*16].
To edit an even-numbered channel, edit the odd-numbered channel to its left.

MIDI

MIDI sequencer won't synchronize/MIDI control is not possible

☐ Are the MIDI cables connected correctly? (→p.14)

☐ A MIDI cable may be broken.

Can't synchronize using MTC or MIDI Clock

☐ Are the master and slave settings correct? (→p.93)

☐ Does the synchronization signal being output by the D32XD/D16XD match the synchronization signal your MIDI sequencer is receiving?
→ Go to the **MIDI/SYNC**, **"MIDI/MMC"** tab page and check the **"MIDI Sync"** setting. (→p.131)

☐ If **"Tempo Source"** is set to **"Tempo Track,"** is MIDI clock or tap tempo data recorded in the tempo track? (→p.63)

☐ Are the synchronization settings of your MIDI sequencer appropriate?
→ Refer to the owner's manual of your MIDI sequencer.

The D32XD/D16XD doesn't receive MMC

☐ In the **MIDI/SYNC**, **"MIDI/MMC"** tab page, is **"MMC Mode"** set to **"Receive"**?

☐ In the above page, is **"MMC Device ID"** set to match the MMC device ID setting of your MIDI sequencer? (→p.131)
→ For some MIDI sequencers, the MMC device ID setting may differ.

☐ Is your MIDI sequencer set to transmit MMC?
→ Refer to the owner's manual of your MIDI sequencer.

Can't use MIDI to control scenes

☐ Do the MIDI channels of the D32XD/D16XD and your MIDI sequencer match?
→ Go to the **MIDI/SYNC**, **"MIDI/MMC"** tab page and check the **"Global Ch"** setting. (→p.131)

☐ Are program changes turned off?
→ Check the settings in the **MIDI/SYNC**, **"MIDI/MMC"** tab page. (→p.131)

The D32XD/D16XD does not synchronize as a slave

→ If the D32XD/D16XD is set as an MTC slave, it may take several seconds for synchronization to occur.
→ Do the **Frame Rate** settings match? (→p.131)
→ If you are using MTC to synchronize, the MIDI sequencer to which you are synchronizing must support MTC.

Can't control another device via MMC

☐ In the **MIDI/SYNC**, **"MIDI/MMC"** tab page, is **"MMC Mode"** set to **"Transmit"**?

☐ Is the MMC slave device set so that it will receive MMC?

☐ Does the D32XD/D16XD's MMC Device ID match the external MIDI device's MMC Device ID?

Can't use MIDI to control mixer parameters

☐ Is the device that is receiving the control changes set to record all MIDI channels 1–16?

☐ Are control changes turned off?
→ Check the settings in the **MIDI/SYNC**, **"MIDI/MMC"** tab page. (→p.131)

CD-R/RW

Can't write

☐ No further data can be written to a CD-R/RW disc that has been finalized. (→p.123)

☐ No data can be written to a CD-RW disc that contains data written by another device.

☐ Failed while writing to CD.
→ Select an appropriate speed for writing to CD-R/RW. If you failed while writing at the highest speed, try a slower speed. In some cases if you are using a disc that is optimized for high-speed writing, you may be unable to write at low speeds.
→ Try a different disc.

☐ Can't select some speeds when writing to CD.
→ The speeds that you can select will differ depending on the type of disc.

☐ Can't create an audio CD.
→ Use a blank disc.

Can't play back on an audio CD player

☐ Did you finalize the disc?
→ In the **CD**, **CD WRITER**, **"CD Utility"** tab page, press the Finalize button to finalize the disc. (→p.125)

☐ Did you use CD-R disc?
→ Some CD players are unable to play back CD-RW disc. We recommend that you use CD-R disc.

☐ Have you tried using a different type of disc?
→ Even when the recommended media is used, some CD players are unable to play back certain types of CD-R/RW disc. You may be able to play back successfully if you use a different type of CD-R/RW disc.

Audio files

Can't preview

☐ Is the audio file format supported?
→ Preview a WAV file of a supported format. (→p.85, 146)

USB

Computer does not recognize the D32XD/D16XD

☐ Is the USB cable connected correctly? (→p.13)

☐ Is the D32XD/D16XD set to USB Slave mode? (→p.92)

Error occurred when you disconnected the D32XD/D16XD from the computer

☐ Use the correct procedure to disconnect. (→p.92)

When you connected the D32XD/D16XD, the computer asked you to install software or a device driver

☐ Does the operating system of your computer support the D32XD/D16XD? (→p.92)

ADAT

"ADAT.Out" tab page is not displayed

☐ Is the optional ADAT I/O board (DIB-8) installed?

☐ Could you have selected a 96 kHz/24-bit song?

Various messages

The message dialog box will disappear when you press the OK button.

Auto-Punch is not available in MTC Slave/Master mode.

☐ Auto-punch recording cannot be performed if the MIDI Sync setting is set to MTC Slave or MTC Master.

Battery voltage for Calender is low.

☐ The calendar battery has insufficient voltage.

→ Replace the battery as described in "Replacing the calendar battery" (→p.179).

Cannot have more than 100 Songs.

☐ You cannot exceed maximum of 100 songs on one song drive.

→ Delete unneeded songs. Be sure to back up any data you wish to save before deleting it from the hard drive.

Check Sum Error occurred.

☐ The system update has failed.

→ Try the update procedure once again from the beginning. If this message still appears, please contact your Korg distributor.

Clock source changed to internal because S/P DIF Error occurred.

☐ Because the **S/P DIF** clock could not be detected correctly, the Word Clock setting Clock Source has been switched to Internal.

→ Make sure that the signal is being output correctly from the external device.

→ Make sure that the D32XD/D16XD is correctly connected with the external device.

→ Make sure that the optical digital cable is not faulty.

Clock source changed to internal because the sampling frequencies do not match.

☐ Because the external sampling frequency does not match the sampling frequency of the current song, the **Word Clock** setting **Clock Source** has been switched to **Internal**.

Completed.

☐ The operation has been completed successfully.

Continuous recording time limit exceeded.

☐ The maximum continuous recording time is 12 hours (6 hours at 96 kHz). It is not possible to continuously record for longer than this.

Directory Path is too long.

☐ Access is not possible because the directory path is too long.

→ The D32XD/D16XD cannot access a path that is longer than 64 characters. Do not create a directory path longer than 64 characters.

Disc is not CD-RW.

The disc currently in the drive is not a CD-RW.

→ Insert a CD-RW disc.

Disk too busy.

☐ This message will appear if repeated punch-in/out recording or track editing operations have fragmented the data on the disk, slowing down access to the hard drive.

→ In the **TRACK**, **"EditTrk"** tab page, execute the **"OptimizeTrk"** operation with **"Mode"** set to **"Normal."** If this error message still appears even after you execute **"OptimizeTrk,"** go to the **SYSTEM**, **"DiskUtility"** tab page and execute **"CheckDrive."**

note *If "**Disk too busy.**" appears during playback, execute "**Check Drive**" with "**Current Song**" selected. If the message appears during recording, execute "**Check Drive**" with "**Current Partition**" selected.*

note *In some cases, ultra-low frequencies played back in the studio may cause "**Disk too busy.**" messages to appear. In this case, eliminate the problem by relocating the D32XD/D16XD before you execute the Check Drive operation.*

*If the Song Type is 48 kHz/24-bit and you record multiple tracks (four or more tracks) simultaneously, there is a increased possibility that the state of the hard disk recording area (i.e., fragmentation) will cause the "**Disk too busy.**" message to appear. We recommend that you always execute "**OptimizeTrk**" (→p.73) after recording or editing multiple tracks simultaneously in a 48 kHz/24-bit song.*

Drive Error occurred.

☐ An error has occurred while accessing the drive.

→ If this message appears while you are working on a song drive, execute **"Check Drive."** If the message still appears after executing this, format the drive.

→ If this message appears while you are working on the PC drive, format the PC drive.

→ If this message appears while you are working on the CD drive, use a different disc. If the message still appears, it is possible that the CD-R/RW drive has malfunctioned. Please contact your Korg distributor.

Exceeds drive capacity.

☐ There is not enough free space on the drive.

→ If this message appears while you are working on a song drive, you can either delete the Undo data or delete unneeded songs. Alternatively, you can use a different song drive.

→ If this message appears while you are working on the PC drive, delete unneeded files or folders.

Exp/Cmp ratio is out of range.

☐ The expansion/compression ratio used in the **"ExpCmpTrk"** track edit operation is beyond the allowable range. The maximum expansion is double, and the maximum compression is half. Change the settings of the TO and END locations.

Failed to receive MIDI data.

☐ Reception of MIDI data has failed.

Failed to write CD.

☐ Writing to the CD-R/RW disc has failed.

→ Refer to the "Troubleshooting" section on CD-R/RW.

Failed to write System.

☐ System updating has failed.

→ It is possible that the D32XD/D16XD has malfunctioned. Please contact your Korg distributor.

File List data error.

☐ There is an error in the audio data, and the song cannot be selected or saved.

→ Format the affected song drive.

Frame Rate does not match.

☐ The frame rate of the incoming time code does not match the frame rate of the current song.

Illegal Range. In = Out or Out < In.

☐ The operation cannot be executed because there is a problem with the IN and OUT locations specified for track editing or loop playback.

→ The IN and OUT locations are the same, or the OUT location is earlier than the IN location.

Illegal Range. To = End or End < To.

☐ The operation cannot be executed because there is a problem with the TO and END locations specified for track editing or loop playback.

→ The TO and END locations are the same, or the END location is earlier than the TO location.

In ~ Out is out of range.

☐ The operation cannot be executed because there is a problem with the IN and OUT locations specified for track editing or auto-punch recording.

→ Set the IN-OUT region not to exceed 12 hours (6 hours at 96 kHz) in length.

Insert next disc and press OK.

☐ Insert the next disc.

Insufficient space available on the CD.

☐ This CD-R/RW disc does not contain enough free space to write the selected data.

Maximum number of tracks is 99.

☐ A maximum of 99 tracks can be written to one CD.

No audio events on the master track.

☐ The master track does not contain any audio events.

No REC-READY tracks.

☐ None of the tracks have been set to the record ready mode.

Not enough Memory.

☐ The current recording or track editing operation would exceed the amount of memory space available.
→ Delete unneeded track data from the song.
→ In the **TRACK**, **"EditTrk"** tab page, execute **"OptimizeTrk"** with **"Mode"** set to **"Normal."** If error messages still appear after you execute **"OptimizeTrk,"** go to the **SYSTEM**, **"DiskUtility"** tab page and execute **"CheckDrive."**

Number of tracks does not match.

☐ When executing a track edit operation, the number of tracks before and after the operation does not match.

Operation canceled.

☐ The operation was canceled.

Repaired successfully.

☐ When the hard drive was checked, errors found on the disk were repaired successfully. The audio data has also been completely recovered.

Repaired, but some audio data was lost.

☐ When the hard drive was checked, errors were found on the disk. The drive was repaired, but some audio data could not be completely repaired. You may hear some "pops" in the sound.

→ You can minimize the pops by executing **"OptimizeTrk."**

Root Directory is full.

☐ You have reached the maximum number of files or folders that can be saved in the root directory of the PC (USB) drive.

→ Delete unneeded folders or files.

Sampling Frequency does not match.

☐ The external sampling frequency clock does not match the sampling frequency of the current song.

Scrub Location exceeded song end.

☐ The scrub function controlled by the **SCRUB** key is able to display the waveform in a range from the beginning to the end of the song.
If you press the **SCRUB** key at a location that is later than the end, this message will appear, and then the location will return to the end of the song.

Song Data error.

☐ The song data contains an error, and cannot be selected or saved.

→ Delete the song that cannot be selected or saved.

→ Format the affected song drive.

Song End out of range.

☐ Executing the track editing operation would cause the ending location of the song to exceed the allowable song length.

→ A song cannot be more than 23:59:59.999 in length.

Song List data error.

☐ The song list data contains an error, and the song cannot be selected or saved.

→ Format the affected song drive.

S/P DIF Error occurred.

☐ An error has occurred in the S/P DIF digital connection.

→ Make sure that the external device is correctly connected to the D32XD/D16XD.

→ Make sure that the optical digital cable is not faulty.

Tempo too fast.

☐ When recording tempo, recording failed because the tempo was too fast.

→ If you are recording MIDI Clock data, set the MIDI output device to a slightly slower tempo.

→ If you are recording tap tempo, tap more slowly.

Tempo too slow.

☐ When recording tempo, recording failed because the tempo was too slow.

→ If you are recording MIDI Clock data, set the MIDI output device to a tempo of ♩=40 or faster.

→ If you are recording tap tempo, tap more quickly.

The data is unchanged.

☐ The operation was executed, but the results are identical to the previous state.

The location cannot be stored.

☐ The current location cannot be stored.

This CD is not playable.

☐ The CD cannot be played because is not an audio CD or because it has not been finalized.

This file name is already in use.

☐ An identically-named file already exists.

→ Change the file name.

This format is not supported.

☐ The inserted disc is in a format that the D32XD/D16XD is unable to read.

This is a blank CD.

☐ You have inserted a blank disc.

This operation is not available.

☐ It is currently not possible to perform this operation.

To ~ End is out of range.

☐ The track editing operation cannot be executed because there is a problem with the TO and END locations you specified.

→ The TO-END region must not exceed 12 hours (6 hours at 96 kHz).

Too many files in this drive.

☐ No more audio data files can be saved on the song drive.

→ Either erase the Undo data, or delete unneeded songs. Alternatively, use a different song drive.

Too many REC-READY tracks for Punch Rec.

☐ The number of tracks selected for recording exceeds the allowable number of tracks for punch-recording.

→ Refer to "Recorder" (→p.64).

Track length is under 4 seconds.

☐ When using Disc At Once to create an audio CD, the data contained a track that is shorter than four seconds.

→ The minimum time for a track (the total of the song to be written and the post-gap) is four seconds.

Trigger/RecStart is not available in MTC Master mode.

☐ In order to perform **Trigger/RecStart** recording, the **MIDI Sync** setting cannot be set to **MTC Master**.

Trigger/RecStart is not available in MTC Slave mode.

☐ In order to perform **Trigger/RecStart** recording, the **MIDI Sync** setting cannot be set to **MTC Slave**.

Undo Data error.

☐ The song cannot be selected or saved because there is an error in the Undo data.

→ Delete the song that cannot be selected or saved.

→ Format the affected song drive.

Wrong disc.

☐ The wrong disc is inserted for the operation you are attempting to execute.

Confirmation messages

Info: "***"**

☐ This will appear when there is information to be conveyed to the user.

→ Press the **OK** button and continue operation.

Serious error messages

Fatal: "***"**

☐ This will appear if a problem or malfunction has occurred on the D32XD/D16XD.

→ If this type of message appears, write down the contents of "****" and contact your Korg distributor.

More about drives and files

Drives

The files that can be handled by the CD-R/RW drive and PC (USB) drive are explained below.

CD-R/RW drive

This drive can handle the following types of discs.

Media type	Purpose
CD (audio CD)	read only
CD-ROM (data CD)	read only
CD-R	read/write
CD-RW	read/write/erase

Supported file	Supported format	Operations
Audio CD	CD-DA (Red book compliant)	playback, writing
Backup file	ISO 9660 Level 1	backup, restore
WAV format audio file	ISO 9660 Level 1	import, export

- By erasing a CD-RW, you can once again use it as a blank disc.
- When writing to a disc, you can specify the speed at which data will be written. Choose a speed that the disc you are using supports.
- There are two ways to write a CD.

Disc At Once

- Creating an audio CD using Album CD Project

This performs the entire process from writing through finalization in a single step. No additional writing will be possible.

Track At Once

- Creating an audio CD track by track
- Backing up
- Exporting audio files

Additional data can be written up to 99 times, as long as there is free space on the disc.
To prevent additional data from being written, finalize the disc.

note *When writing additional data, writing will be more reliable if you use the same writing speed as when writing the previous data.*

PC (USB) drive

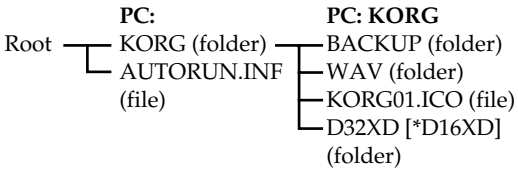
You can transfer files between this drive and a song drive or your personal computer.
Within the PC (USB) drive, you can view, delete, or rename files and folders.
This drive has a capacity of 2 GB, and will be recognized by your computer with a name of **KORG D32XD** [***KORG D16XD**].

Supported file	Operations
Backup file	backup, restore
WAV file	import, export
PC file	Edit PC File

Supported format
FAT16 file system; long file names are not supported, and double-byte characters (such as Japanese) are not supported.

The PC (USB) drive has the following structure.

Folder/file structure



BACKUP folder
When backing up → back up to the BACKUP folder.
When restoring → the BACKUP folder will be referenced, but you can choose from any folder.

WAV folder
When exporting → back up to the WAV folder
When importing → the WAV folder will be referenced, but you can choose from any folder.

AUTORUN.INF, KORG01.ICO
The files contain settings.

*Do not delete the **AUTORUN.INF** or **KORG01.ICO** files.*

D32XD [*D16XD] folder
This folder is used for updating the system.

note *The above folders and setting files are created when you format the PC (USB) drive on the D32XD/D16XD. Do not format the PC (USB) drive from your computer.*

note *For details on operations between your computer and the PC (USB) drive, refer to USB (→p.92).*

Audio CDs and files

Audio CDs

Playing an audio CD

Use **CD**, **CD Player** to play back an audio CD.
You cannot play back a CD-R/RW that has not been finalized.

note *You cannot play back discs that do not conform to the Compact Disc (CD) specification, such as music discs utilizing copy-protection technology.*

Creating an audio CD

Using Disc At Once

This method lets you edit the length of the gaps between songs, or divide a single song into several tracks.
You can also use this type of a disc as a pressing master for mass production. Since the disc will be finalized when it is written, no further data can be written to it.

- Maximum number of tracks 99
- Pre-gap time [0–59 seconds/74 frames], default value 2 seconds *1
- Post-gap time [0–59 seconds/74 frames], default value 0 seconds
- Minimum track duration 4 seconds

**1 The pre-gap for track 1 is fixed at 0 seconds. The default pre-gap is 0 seconds for tracks that are divided by album CD track marks.*

Using Track At Once

Use this method when you want to write one track at a time. You can continue writing additional tracks until you finalize the disc.
Finalize the disc if you want to play it back on a CD player.

- Maximum number of tracks 99
- Silence between songs 2 seconds
- Minimum track duration 4 seconds

Files

Writing

You can write the following files from the D32XD/D16XD to the internal drive.

- Backup files (data specific to the D32XD/D16XD)
- WAV files
  (16-bit/44.1 kHz, 16-bit/48 kHz, 24-bit/44.1 kHz, 24-bit/48 kHz, 24-bit/96 kHz; monaural and stereo are supported)

The characters that can be used in a file name are single-byte uppercase alphabetical characters **"A"–"Z"** and numerals **"1"–"9,"** and the underline character "_".

When renaming a file, you cannot change the extension.

Backup files

The amount of space required for the backup is displayed when you make settings for the backup.

CD-R/RW drive

- You can back up files across more than one disc if necessary.
- You will need to provide the necessary number of discs for the backup. (The discs do not have to be blank.)
- If the disc is not blank, it must have a certain amount of free space in order to be used for backup. If the disc does not have enough free space, an error message will appear.

PC (USB) drive

An error message will appear if the drive does not have enough free space.

Backup data filenames

The following names are automatically assigned according to the type of backup.

1 Song

XXXXXX + YY + extension (.DBK)

XXXXXX will be the first six characters of the song name, and YY will be a number in the range of 01–99 indicating the backup disc number.

i.e. *If you are backing up a song named **"New MySong"** and this is the first disc of the backup, the default filename will be **"NEW_MY01.DBK"**.*

If the song name contains a character that cannot be used in a filename, or a space, that portion will be replaced by an underline character "_", and lowercase characters will be replaced by uppercase characters.

All Data

ALLDAT + YY + extension (.DBK)

YY will be a number in the range of 01–99 indicating the backup disc number.
(01–99 is the number of the backup disc used)

i.e. *The default filename for the third backup disc is **"ALLDAT03.DBK"**.*

User Data

USERDATA + extension (.DUR)

The default filename is **"USERDATA.DUR"**.

WAV-format audio files

You can use the Export command to write WAV-format audio files.
An error message will appear if there is insufficient space. →"Various messages"

- You can copy data to the clipboard and export it.
- If the clipboard contains data for one track, a monaural file will be created. If it contains two tracks, a stereo file will be created. If it contains four or more tracks, the corresponding number of monaural files will be created.

Filenames for audio data

Track content of the clipboard	ST or MN	Extension	No. of characters	Default filename
2 tracks	stereo	WAV	6 characters + ST	NONAMEST
Other than 2 tracks	monaural	WAV	6 characters + [01–16]	NONAME+ [01–16]
Master track L	monaural	WAV	6 characters + ML	NONAMEML
Master track R	monaural	WAV	6 characters + MR	NONAMEMR
Master track L/R	stereo	WAV	6 characters + MT	NONAMEMT

For example if you export an audio file whose original track number is 04, the file name will be **"NONAME04.WAV"**.

Loading

You can load the following files into the D32XD/D16XD.

- Backup files (data specific to the D32XD/D16XD)
- WAV files (44.1kHz/16bit, 48kHz/16bit, 96kHz/16bit, 44.1kHz/24bit, 48kHz/24bit, 96kHz/24bit; monaural and stereo are supported)
- PC files

Backup files

You can load these files into the D32XD/D16XD by performing the Restore operation.
If the restore-destination song drive has insufficient space, an error message will appear. →"Various messages"

File icons that you can view and select

: Folder icon
Indicates a folder. Select it to display the contents.

: Song data icon
Indicates song data. Select it to display the contents.

: Divided song data icon
Indicates song data that was divided into more than one backup volume. You cannot open this.

: User data icon
Indicates user data. Select this to display the contents.

: Song icon
Indicates song data.

: Effect data icon
Indicates user effect data.

: EQ library icon
Indicates user EQ library data.

: Comp data icon
Indicates user comp data.

:Album CD project icon
Indicates album CD project data.

A backup that spans more than one CD-R/RW disc must be restored in the order in which it was backed up. The last two characters of the file name will be a number that indicates the backup order; restore the discs in this order.

If the song name contains characters other than alphanumeric characters and the underline "_", such characters will be converted into an underline "_". Lowercase characters will be converted into uppercase.

WAV-format audio files

You can load these files into the D32XD/D16XD by performing the Import operation.

If the import-destination song drive has insufficient space, an error message will appear. →"Various messages"

File icons that you can view and select

: Folder icon
Indicates a folder. Select it to display the contents.

: WAV icon
Indicates a WAV file. Only supported WAV files will be displayed.

Files on the PC (USB) drive (PC files)

If a file on the PC (USB) drive is in a supported format, you can use Edit PC File to view, delete, or rename the file/folder.
→ Edit PC File (→p.129)

File icons that you can view and select

: Folder icon
Indicates a folder. Select it to display the contents.

: File icon (PC file)
Indicates a file.

: Song data icon
Indicates song data. Select it to display the contents

: Divided song data icon
Indicates song data that was divided into more than one backup volume. You cannot open this.

: User data icon
Indicates user data. Select it to display the contents

: WAV icon
Indicates a WAV file.

: Song icon
Indicates song data.

: Effect data icon
Indicates user effect data.

: EQ library icon
Indicates user EQ library data.

: Comp data icon
Indicates user comp data.

:Album CD project icon
Indicates album CD project data.

Installing the options

Please read this before you begin installation

Safety precautions

Warnings

- Before installing an option, be sure to disconnect the power supply cable and the connecting cables to any peripheral devices. Failure to do so could cause electrical shock or may damage the device.
- When installing, repairing, or replacing an option, you must perform only those actions that the owner's manual directs, and no other.
- Do not apply excessive force to the electronic components or connectors on the circuit board(s) of an option, or attempt to disassemble them.
- This could cause electric shock, fire, or malfunction.

Cautions

- Before touching the option, touch a metal component of the device into which it will be installed, to discharge any static electricity that may be present in your body.
  Static electricity may damage the electronic components.
- Be careful of any sharp edges or pointed metal parts on the option or the device into which the option is being installed.
  Sharp edges or points may cause injury.
- Danger of explosion if battery is incorrectly replaced. Replace only the same or equivalent type.
- When handling an option, never touch parts that are not related to the installation.
  Doing so may cause electrocution or malfunctions.
- When handling an option, be careful not to touch the leads on the back side of the circuit board (the side opposite that on which the components are mounted).
  The sharp points may cause injury.
- Do not allow the option or other device being installed to become wet, and do not allow objects to be placed on top of it.
  Doing so could cause malfunction.
- When installing an option, be careful that screws or other parts do not fall into the device into which it is being installed.
  Doing so could cause malfunction.

Korg Inc. takes no responsibility for any malfunctions or damage that may occur from improper use or modification of this product. Nor will Korg Inc. be responsible for any damages resulting from the loss or destruction of data.

Before you begin working

■ Did you disconnect the power cable?

You must turn off the main power switch of the D32XD/D16XD, and then disconnect the power cable.

■ Has 30 minutes passed since you turned off the power?

The interior of the D32XD/D16XD reaches a high temperature during operation. Wait until the interior has cooled before you begin the installation.

■ Did you back up your data?

An installation error or other problem may cause saved data to be lost. Back up your important data on a CD before you perform the installation.

Please note when installing an option board (ACB-8, AIB-8 and DIB-8)

- So that static electricity in your body does not damage the electronic components, touch the ground wire of a grounded device or an unpainted metallic component to discharge any static electricity in your body before installing an option board or memory. Internal components of the D32XD/D16XD and of the option boards may be damaged by static electricity.
- Follow the installation procedure, and be sure that each part is installed correctly and in the correct orientation.
- Please use care in handling option boards. Dropping them or applying pressure to them may damage the components.
- Avoid touching exposed metal edges of the circuit board, or portions that need not be handled during installation.
- Be careful not to lose the screws that you remove.
- Do not use screws other than those that are installed in the option board and the D32XD/D16XD. Using screws of a different shape or length may damage the unit or cause it to malfunction.
- Be sure to firmly tighten the screws used for attachment.
- Be sure that the option board is inserted correctly into the connector or locking pins. After installation, be sure to check that the board is installed correctly. If the board is not inserted all the way, faulty contact or power supply shorts can occur, making the unit malfunction.
- Be careful not to drop parts or the option board into the inside of the instrument.
  If you are unable to retrieve a screw or part that was dropped inside the instrument, please contact your local Korg distributor.
- You will need a Philips ("+") screwdriver.
  Use a screwdrive of the appropriate size for the screws. The screw heads may be damaged if you use a screwdrive of the wrong size.

Installing the 8-channel analog input board (AIB-8) and 8-channel analog compressor board (ACB-8)

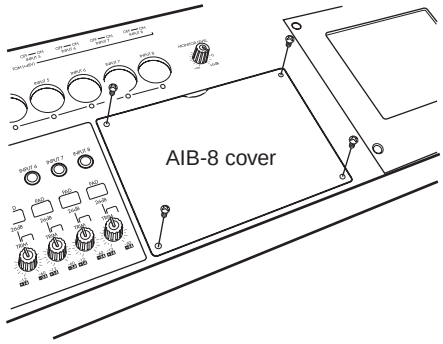
An 8-channel analog input board (AIB-8) can be installed to add analog input channels INPUT 9–16. An 8-channel analog compressor board (ACB-8) can also be installed for INPUT 9–16 channels.

Installation procedure

1. **You will need a Philips (+) screwdriver.**
2. **Turn off the power of the D32XD/D16XD, and disconnect all cables.**

   The interior of the D32XD/D16XD reaches high temperatures during operation. Before you perform this operation, turn off the power and wait at least 30 minutes for the interior to cool down.

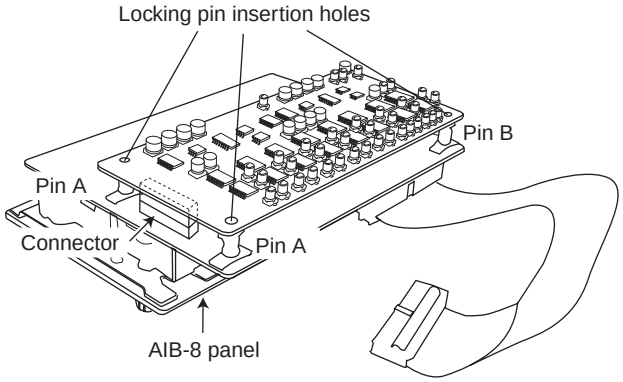
3. **Use the screwdriver to remove the four screws that fasten the AIB-8 cover.**
   Be careful not to lose the screws you removed.



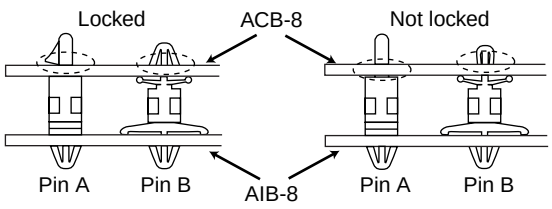
4. **Remove the AIB-8 cover.**

If you are installing the ACB-8 on the AIB-8, perform steps 'a' and 'b'.

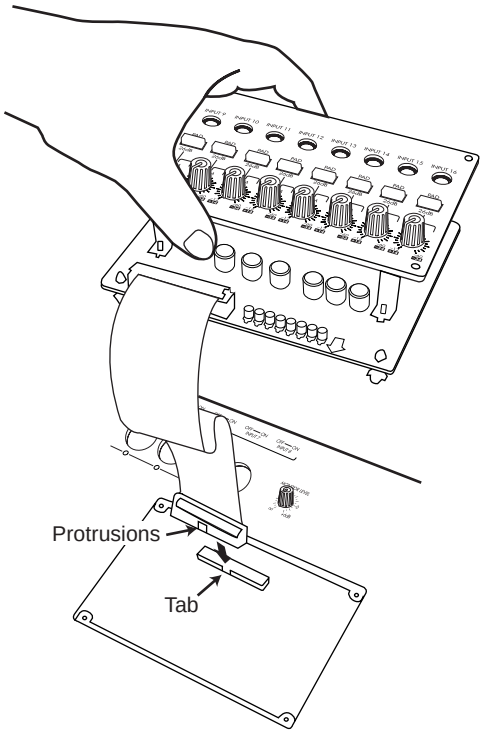
a. Align the three holes of the ACB-8 with the locking pins and connector of the AIB-8, and press it in.



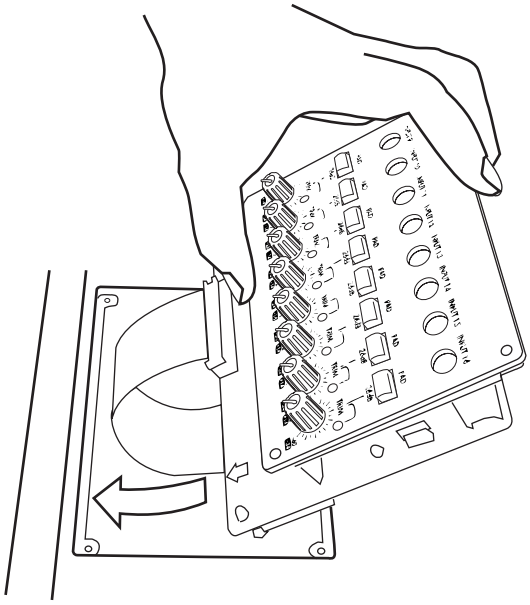
b. Press in until the two locking pins A and one locking pin B are locked. When doing so, apply pressure to areas where no components are mounted.



5. **Insert the AIB-8's flat cable into the connector.**
   Make sure that the cable is oriented correctly, and push it firmly all the way in.



6. **Install the AIB-8 in the D32XD/D16XD.**
   Insert the edge containing the AIB-8's TRIM knobs into the opening that had been covered by the AIB-8 cover, so that the flat cable is folded inside the D32XD/D16XD.



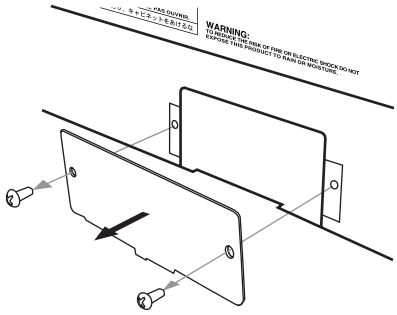
7. **Fasten the AIB-8 in place, using the screw driver to fasten the four screws you removed.**
8. **When you are finished, turn on the power and verify that the AIB-8 is installed correctly. (→p.180 "Checking after installation")**

Installing the ADAT I/O board (DIB-8)

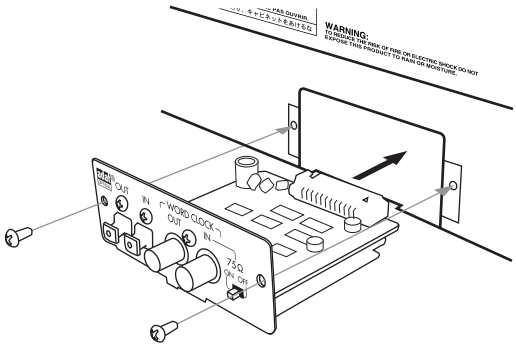
An ADAT I/O board (DIB-8) can be installed in the D32XD/D16XD to add eight channels and word clock in/out of digital input.

Installation procedure

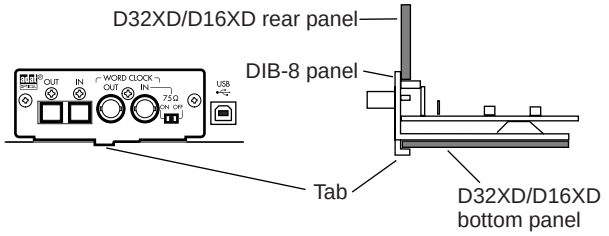
1. **You will need a Philips (+) screwdriver.**
2. **Turn off the power of the D32XD/D16XD, and disconnect all cables.**
3. **Use the screwdriver to remove the two screws that fasten the DIB-8 cover.**
   Be careful not to lose the screws you removed.



4. **Remove the DIB-8 cover.**
5. **Install the DIB-8, making sure that the vertical and horizontal alignment are correct.**
   The side with the components mounted faces up, and the side with the connector is at the rear.

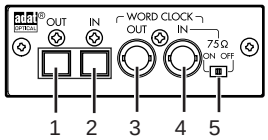


6. **Press the DIB-8 in until its panel touches the rear panel. Press it down so that the tab at the bottom is below the bottom panel.**



7. **Fasten the DIB-8 cover using the two screws that you removed.**
8. **When you are finished, turn on the power and verify that the DIB-8 is installed correctly. (→p.180 "Checking after installation")**

Parts of the DIB-8 and their functions



1. **ADAT output jack**
   This jack outputs an ADAT format (ADAT Type I/II format) digital signal of the same sampling frequency and bit depth as the current song.

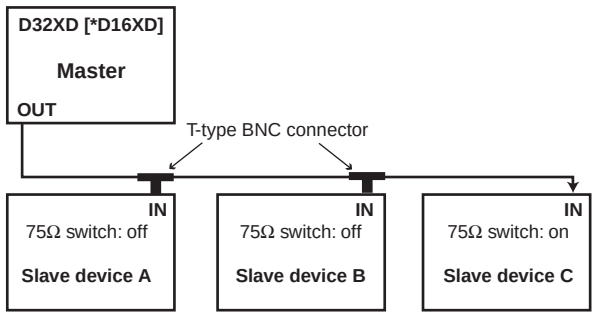
   96 kHz output is not supported.
2. **ADAT input jack**
   This jack inputs an ADAT format (ADAT Type I/II format) digital signal of the same sampling frequency and bit depth as the current song.

   96 kHz input is not supported.
3. **Word clock output jack**
   This jack outputs the internal clock as a word clock signal.
4. **Word clock input jack**
   This jack inputs a word clock signal from an external device.
5. **75Ω switch**
   This switches the 75Ω word clock terminator on/off. Turn the switch On if this is the end of the connection, or Off if the connection is branched.

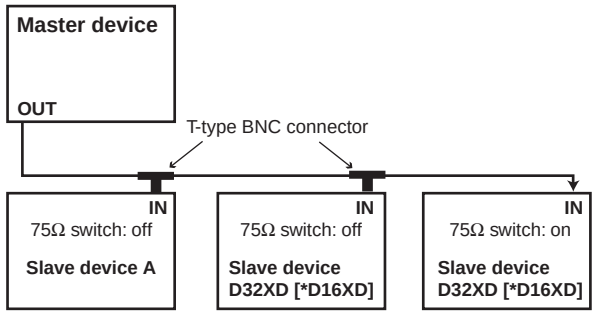
Word clock connection

When using the D32XD/D16XD as the word clock master and connecting multiple word clock slave devices to it, use T-type BNC branching connectors to distribute the word clock. When using the D32XD/D16XD as a word clock slave, you will need to set the 75Ω switch appropriately. Turn this switch on for the last connected device, and off for devices from which the word clock is being branched.

If the D32XD/D16XD is transmitting the word clock (Master)



If the D32XD/D16XD is receiving the word clock (Slave)



Cautions when replacing the calendar battery

- So that static electricity in your body does not damage the electronic components, touch the ground wire of a grounded device or an unpainted metallic component to discharge any static electricity in your body before installing an option board or memory. Internal components of the D32XD/D16XD and of the option/memory boards may be damaged by static electricity.
- Follow the installation instructions, being careful not to reverse the polarity of the battery.
- Avoid touching exposed metal edges of the circuit board, or portions that need not be handled during installation.
- All screws (and washers) that are removed will be used, so be careful not to misplace them.
- Do not use screws other than those that are installed in the D32XD/D16XD. Using screws of a different shape or length may damage the unit or cause it to malfunction.
- Be sure to firmly tighten the screws used for attachment.
- When installing the battery, do not use excessive force. Pressing the battery too hard or using excessive force may cause malfunctions or damage.
- Make sure that the battery is completely inserted into the battery holder. After installation, check to make sure that the battery is firmly in place.
- When installing the battery, be careful not to drop it inside the device.
  If you drop the battery inside the device and are unable to retrieve it, please contact your Korg distributor.
- You will need a Philips ("+") screwdriver.
  Use a screwdrive of the appropriate size for the screws. The screw heads may be damaged if you use a screwdrive of the wrong size.

Replacing the calendar battery

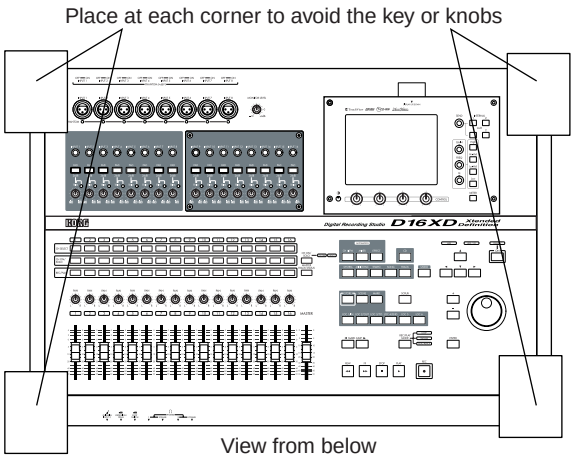
The calendar battery maintains the date and time that are used to time-stamp data when it is saved. Use a CR2043 battery. Before you replace the battery, be sure to read "Please read this before you begin installation" and "Before you begin working" on p.176.

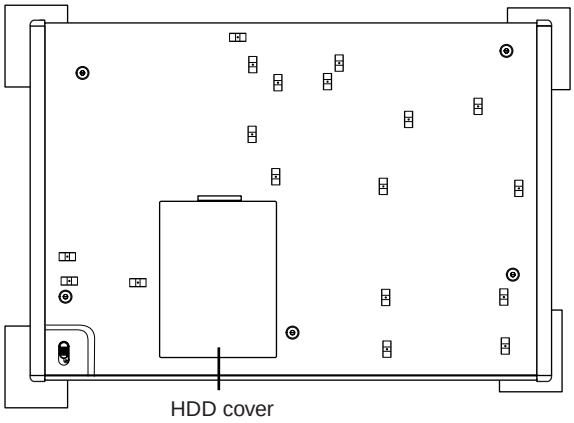
The following CR2032 batteries may be used with the D32XD/D16XD

- Sony CR2032 batteries

Replacement procedure

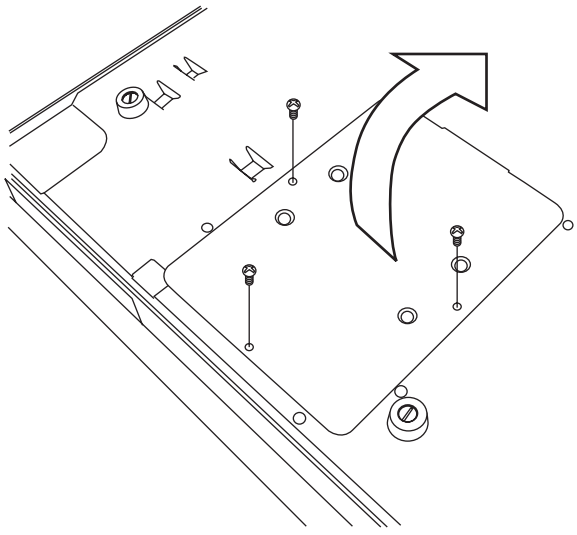
1. **You will need a Philips (+) screwdriver and a stack of magazines or similar objects (used to prevent damage to the keys and knobs, as shown in step 3 below).**
2. **Turn off the power of the D32XD/D16XD, and disconnect all cables.**
3. **As shown in the illustration below, place stacks of magazines at the four corners to prevent damage to the D32XD/D16XD's knobs and keys, and place the D32XD/D16XD upside down, supported by the stacks of magazines.**



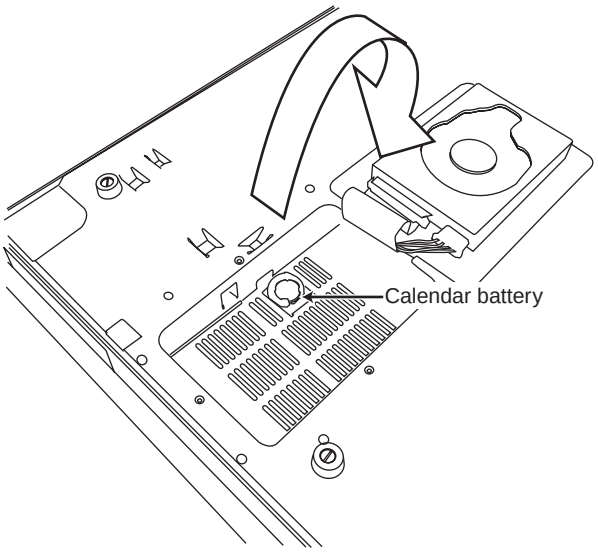


4. **Use the screwdriver to remove the four screws that hold the HDD cover.**
   Be careful not to lose the screws you removed.

   The hard disk is attached to the HDD cover. Do not subject it to impact or vibration.



5. **Remove the HDD cover.**



6. **Notice where the calendar battery is located.**
7. **Remove the worn-out calendar battery.**
   Press on the battery at the location shown below to remove it from the tab of the battery holder, and lift up the battery to remove it.
   Be careful not to drop the battery into the interior of the D32XD/D16XD.

8. **Install the new calendar battery.**
   With the "+" side of the battery upward, insert it diagonally into the battery holder and press it into place.
9. **Close the HDD cover by reversing the procedure with which you opened it.**
10. **When you have finished, turn on the power and verify that the message "Battery voltage for Calender is low." no longer appears.**

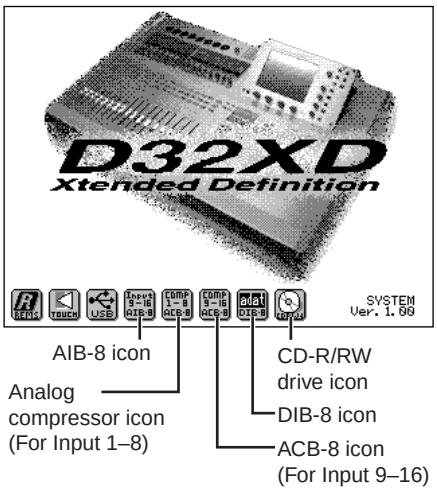
    You must perform this checking step immediately after step 9.
11. **Reset the calendar to the correct time and date. (→p.2 "Setting the calendar")**

If excessive force was applied to the hard disk harness or connector while replacing the battery, a drive-related error message will appear.

Checking after installation

When you turn on the D32XD/D16XD, the currently-installed option boards will be shown in the LCD screen.

After installing an option board, be sure to turn on the power and verify that the icon for the option board you installed appears in the LCD screen when you turn on the power.



If the icon does not appear, you may have installed the board incorrectly. Immediately turn off the power, and check that you installed the board correctly.

If the calendar battery is not installed correctly, or if it has run low, the LCD screen will display a message of **"Battery voltage for Calender is low."** when you turn on the power and the D32XD/D16XD has started up. Once again make sure that you are using a battery that has not run down, and that the battery is installed correctly.

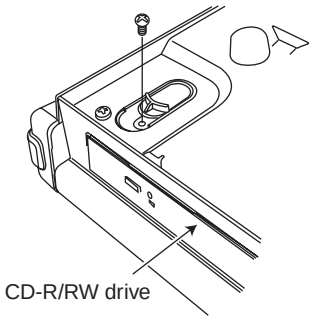
If you have questions about installation, contact your Korg distributor.

Checking the internal CD-R/RW drive

When shipped from the factory, a removable CD-R/RW drive is installed in the D32XD/D16XD. When moving or transporting the D32XD/D16XD, you should be careful to avoid subjecting it to vibration or impact.
If the CD-R/RW drive icon fails to appear after the D32XD/D16XD has been moved or transported, or if error messages appear frequently, use the following procedure to check that the CD-R/RW drive is installed correctly.

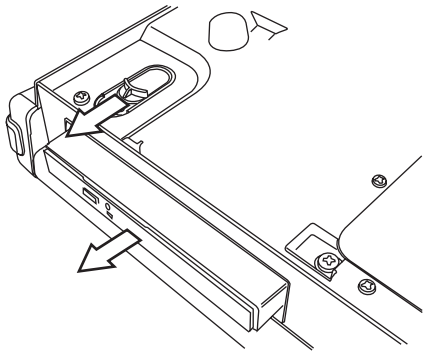
Before performing this procedure, you must turn off the power of the D32XD/D16XD and disconnect the power cable.

1. **You will need a Philips (+) screwdriver and a stack of magazines or similar objects.**
2. **Turn off the power of the D32XD/D16XD, and disconnect all cables from it.**
3. **As described in the preceding section "Replacing the calendar battery," lay the D32XD/D16XD on its face with stacks of magazines etc. supporting its four corners so that the knobs and keys are not damaged.**
4. **From the bottom of the D32XD/D16XD, remove the single screw that fastens the internal CD-R/RW drive.**

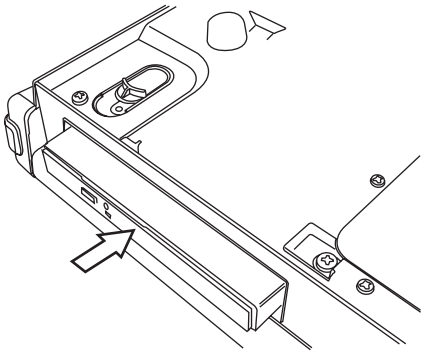


5. **Slide the removal switch in the direction of the arrow, and the CD-R/RW drive will be pushed out of the D32XD/D16XD.**

   If you are simply checking that the drive is installed, it is sufficient for the drive to be pushed out by this distance. You do not need to pull the drive out any farther.



6. **Push the CD-R/RW drive in until the front panel of the drive is aligned with the front panel of the D32XD/D16XD.**
   Press the location indicated by the arrow until you hear a click, so that the internal connector is firmly connected.



7. **Fasten the screw that you removed in step 4.**

Specifications

Operating temperature:
+5 – +35 °C (do not allow condensation)

■ Main sections

<Recorder section>

Number of tracks: **D32XD**
272 tracks (including virtual tracks)

Simultaneous playback 32 tracks, simultaneous recording 8 tracks @ 48 kHz/44.1 kHz, 16-bit
(If the AIB-8 is installed, 16 tracks of simultaneous recording)

Simultaneous playback 16 tracks, simultaneous recording 8 tracks @ 48 kHz/44 kHz, 24-bit

Simultaneous playback 8 tracks, simultaneous recording 4 tracks @ 96 kHz, 24-bit

D16XD
144 tracks (including virtual tracks)

Simultaneous playback 16 tracks, simultaneous recording 8 tracks @ 48 kHz/44.1 kHz, 16-bit
(If the AIB-8 is installed, 16 tracks of simultaneous recording)

Simultaneous playback 16 tracks, simultaneous recording 8 tracks @ 48 kHz/44 kHz, 24-bit

Simultaneous playback 8 tracks, simultaneous recording 4 tracks @ 96 kHz, 24-bit

Recording format: 24-bit/16-bit uncompressed, 44.1 kHz/48 kHz/96 kHz

Recording time: 44.1 kHz, 16-bit: maximum 152 hours
96 kHz, 24-bit: maximum 40 hours
* when using a 40 GB hard disk

Number of songs: 100 songs per drive

Locate points: Six points per song

Mark points: 100 points per song (marks can be named)

Metronome/Rhythm patterns:
265

MMC functions: Transmitted and received

Synchronization: MTC transmission/reception, MIDI Clock transmission

Tempo map (200 events per song)

Sync track (one track per song)

Tempo recording

CD-R/RW functions:
Internal CD-R/RW, audio CD writing (Track At Once, Disc At Once), backup/restore, audio file (WAV format) import (ISO 9660), system load

USB functions: Backup/restore, audio file (WAV format) import/export (FAT16), system load

PC (USB) drive capacity:
2 GB

Track editing: Copy (overwrite/insert), erase, delete, swap, reverse, optimize (normal/erase silence/erase punch noise), expand/compress, fade, normalize

Song editing: Copy, move, delete, rename, protect, save now

Display format: Calendar time, HDD remaining capacity, scene, mark, tempo map

Locate format: Hour/Min/Sec.ms, Hour/Min/Sec.Frame, Meas/Beat/Tick

<MIDI functionality>

MIDI functionality: Mixer control, effect control, MMC transmission/reception, MTC transmission/reception, MIDI Clock transmission

<Mixer section>

Internal processing: 69-bit

Inputs: **D32XD**
56 channels (32 recorder channels, 24 sub-in)

D16XD
40 channels (16 recorder channels, 24 sub-in)

Buses: **D32XD**
14 buses
2 Eff Send buses, 4 AUX buses, 2 SOLO buses (stereo), 2 CUE buses (stereo), 2 MASTER buses (stereo), 2 MONITOR buses (stereo)

D16XD
12 buses
2 Eff Send buses, 2 AUX buses, 2 SOLO buses (stereo), 2 CUE buses (stereo), 2 MASTER buses (stereo), 2 MONITOR buses (stereo)

Equalizer: **D32XD**
Recorder channels 1–32
4-band full parametric EQ

Sub Mixer channels 1–24
2-band shelving EQ

Master track
8-band full parametric EQ

D16XD
Recorder channels 1–16
4-band full parametric EQ

Sub Mixer channels 1–24
2-band shelving EQ

Master track
8-band full parametric EQ

Dynamics: analog compressor
maximum 16 channels (when the ACB-8 is installed)

Scene memories: 100 scene per song

<Effect section>

Internal processing: 56-bit

Structure: **D32XD**
Insert × 24 (maximum)
Master × 2 (maximum)
Final × 1
All usable simultaneously at 44.1/48 kHz

D16XD
Insert × 8 (maximum)
Master × 2 (maximum)
Final × 1
All usable simultaneously at 44.1/48 kHz

Programs: 128 preset, 128 user, 32 song

Algorithms: 52

<General>

Display: 320 × 240 pixel, four-level grayscale Movable LCD with backlight and touch panel

Power supply: AC Local Voltage

Power consumption:
D32XD: 98 W
120 W (AIB-8, ACB-8, DIB-8 is installed)
D16XD: 56 W
70 W (AIB-8, ACB-8, DIB-8 is installed)

Dimensions: 682 mm (W) × 474 mm (D) × 185 mm (H)
26.85" (W) × 18.66" (D) × 7.28" (H) (including protrusions)

Weight: **D32XD**
13.5 kg/39.76 lbs
14 kg/30.86 lbs (when the AIB-8, ACB-8 and DIB-8 is installed)
D16XD
12 kg/26.46 lbs
12.5 kg/27.56 lbs (when the AIB-8, ACB-8 and DIB-8 is installed)

■ Principal specifications

Frequency response:
10 Hz – 20 kHz ±1 dB
@ fs 44.1 kHz, +4 dBu, 10 kΩ load
10 Hz – 22 kHz ±1 dB
@ fs 48 kHz, +4 dBu, 10 kΩ load
10 Hz – 44 kHz ±1 dB
@ fs 96 kHz, +4 dBu, 10 kΩ load

S/N: 103 dB (typical)

Dynamic range: 103 dB (typical)

THD+N: 0.02% (typical) 20 Hz–20 kHz
+16 dBu,10 kΩ load

A/D conversion: 24-bit 64 times oversampling

D/A conversion: 24-bit 128 times oversampling

Sampling frequency
Internal: 44.1 kHz, 48 kHz, 96 kHz
External: 44.1 kHz±6%, 48 kHz±6%, 96 kHz±6%

Record/Playback bit:
16-bit, 24-bit

■ Analog/digital input and output specifications

<INPUT 1–8>

Connectors: XLR-3-31 type (+48 V phantom power, switchable), 1/4" TRS phone jack (balanced)

Input impedance: 4 kΩ (XLR-3-31), 10 kΩ (TRS phone jacks)

Nominal level: –60 dBu to –12 dBu @ TRIM=max. – min. PAD OFF
–34 dBu to +14 dBu @ TRIM=max. – min. PAD ON

Maximum level: –48 dBu to 0 dBu @ TRIM=max. – min. PAD OFF
–22 dBu to +26 dBu @ TRIM=max. – min. PAD ON

Source impedance: 600 Ω

<INPUT 9–16>

* If the 8-channel analog input board (AIB-8) is installed

Connectors: 1/4" TRS phone jack (balanced)

Input impedance: 10 kΩ

Nominal level: –60 dBu to –12 dBu @ TRIM=max. – min. PAD OFF
–34 dBu to +14 dBu @ TRIM=max. – min. PAD ON

Maximum level: –48 dBu to 0 dBu @ TRIM=max. – min. PAD OFF
–22 dBu to +12 dBu @ TRIM=max. – min. PAD ON

Source impedance: 600 Ω

<ANALOG COMPRESSOR>

Threshold level: 0 to –40 dB

Ratio: 1.5:1 to inf:1

Attack time: 1 to 200 mS

Release time: 10 mS to 10 S

Out gain: ±20 dB

<GUITAR INPUT>

Connector: 1/4" phone jack (unbalanced)

Input impedance: 1 MΩ

Nominal level: –60 dBu to –12 dBu @ TRIM=max. – min. PAD OFF
–34 dBu to +14 dBu @ TRIM=max. – min. PAD ON

Maximum level: –48 dBu to 0 dBu @ TRIM=max. – min. PAD OFF
–22 dBu to +12 dBu @ TRIM=max. – min. PAD ON

Source impedance: 600 Ω

<MASTER OUTPUT L/R>

Connectors: 1/4" phone jack (unbalanced)

Output impedance: 150 Ω

Nominal level: +4 dBu

Maximum level: +16 dBu

Load impedance: 10 kΩ or higher

<MONITOR OUTPUT L/R>

Connectors: 1/4" phone jack (unbalanced)
Output impedance: 150 Ω or higher
Nominal level: +4 dBu
Maximum level: +16 dBu
Load impedance: 10 kΩ or higher

<AUX OUTPUT 1–4 [*1, 2]>

Connectors: 1/4" phone jack (unbalanced)
Output impedance: 150 Ω
Nominal level: –10 dBu
Maximum level: +2 dBu
Load impedance: 10 kΩ or higher

<PHONES 1, 2>

Connector: 1/4" stereo phone jack
Output impedance: 100 Ω
Maximum level: 50 mW @ 32 Ω

<S/P DIF INPUT/OUTPUT>

Connector: optical
Format: 24-bit S/P DIF (IEC60958)

<USB>

Connector: Type B
Format: Slave, USB 1.1 compliant
Supported OS: Window Me, Windows 2000 or later
Mac OS 9.0.4 or later

* If using the D32XD/D16XD with Windows 98, please refer to the Korg website or contact your Korg distributor.

<ADAT INPUT/OUTPUT>

* If the ADAT I/O board (DIB-8) is installed

Connectors: Optical
Format: ADAT Type I/II format

<WORD CLOCK INPUT/OUTPUT>

* If the ADAT I/O board (DIB-8) is installed

Connectors: BNC
Format: TTL/75 Ω

<MIDI IN/OUT>

Connectors: DIN 5-pin × 2

<FOOT SW>

Connector: 1/4" phone jack (use separately sold PS-1)

<EXPRESSION PEDAL>

Connector: 1/4" stereo phone jack
(use separately sold XVP-10 or EXP-2)

■ Included items

AC cable
Owner's manual

■ Separately sold options

PS-1 pedal switch
XVP-10 EXP/VOL pedal
EXP-2 foot controller
8-channel analog compressor board (ACB-8)
8-channel analog input board (AIB-8)
ADAT I/O board (DIB-8)

* Appearance and specifications of this product are subject to change without notice. (07, 2003)

Various lists

Rhythm Pattern List

For 96 kHz/24-bit songs, you can select only (Blank), Metro, and HiHat.
For Beat settings other than 3/4, 4/4, and 6/8, only (Blank), Metro, and HiHat can be selected.
For Beat settings of 3/4, 4/4, and 6/8, the following rhythm patterns can be selected in addition to (Blank), Metro, and HiHat.
[I], [F], and [E] indicate Intro, Fill, and Ending patterns. The Length and Tempo values in this list are the number of measures in each rhythm, and the recommended tempo.

Beat:4/4 (242pattern)

Name	Tempo	Name	Tempo	Name	Tempo	Name	Tempo
8bt Rock1	120	[E] 16beat 1	100	[F] SurfRock	169	Beguine1	120
8bt Rock2	120	[E] 16beat 2	100	[E] SurfRock	169	Beguine2	120
8bt Rock3	120	Shuff 1	130	Twist	165	[F] Beguine	120
8bt Rock4	120	Shuff 2	130	[I] Twist	165	Mambo1	100
8bt Rock5	120	Shuff 3	130	[F] Twist	165	Mambo2	100
8bt Rock6	120	Shuff 4	130	[E] Twist	165	[I] Mambo	100
8bt Rock7	120	Shuff 5	130	Reggae	95	[F] Mambo1	100
8bt Rock8	120	Shuff 6	130	[F] Reggae	95	[F] Mambo2	100
[I] 8bt Rock1	120	Shuff 7	130	HipHop 1	90	[E] Mambo	100
[I] 8bt Rock2	120	Shuff 8	130	HipHop 2	90	Salsa	90
[I] 8bt Rock3	120	Shuff 9	130	HipHop 3	90	[I] Salsa	90
[F] 8bt Rock1	120	[I]Shuff 1	130	HipHop 4	90	[F] Salsa1	90
[F] 8bt Rock2	120	[I] Shuff 2	130	HipHop 5	90	[F] Salsa2	90
[F] 8bt Rock3	120	[F] Shuff 1	130	HipHop 6	90	[E] Salsa	90
[F] 8bt Rock4	120	[F] Shuff 2	130	HipHop 7	90	Samba1-1	95
[F] 8bt Rock5	120	[F] Shuff 3	130	HipHop 8	90	Samba1-2	95
[E] 8bt Rock1	120	[E] Shuff 1	130	HipHop 9	90	Samba1-3	95
[E] 8bt Rock2	120	[E] Shuff 2	130	HipHop10	90	[I] Samba1	95
8beat 1	120	HalfTime1	150	[I] HipHop 1	90	[F] Samba1	95
8beat 2	120	HalfTime2	150	[F] HipHop 1	90	[E] Samba1	95
8beat 3	120	[I] HalfTime	150	[F] HipHop 2	90	Samba2-1	95
8beat 4	120	[F] HalfTime	150	[E] HipHop 1	90	Samba2-2	95
8beat 5	120	[E] HalfTime	150	Rap1	95	[I] Samba2	95
8beat 6	120	RockBld 1	90	Rap2	95	[F] Samba2	95
8beat 7	120	RockBld 2	90	[I] Rap	95	Gipsy1	120
8beat 8	120	[I] RockBld 1	90	House 1	130	Gipsy2	120
8beat 9	120	[I] RockBld 2	90	House 2	130	[I] Gipsy	120
8beat 10	120	[F] RockBld 1	90	House 3	130	[F] Gipsy	120
[I] 8beat1	120	[F] RockBld 2	90	House 4	130	[E] Gipsy	120
[I] 8beat 2	120	[E] RockBld 1	90	[I] House 1	130	Analog 1	100
[F] 8beat 1	120	[E] RockBld 2	90	[I] House 2	130	Analog 2	100
[F] 8beat 2	120	R&Funk 1	98	[F] House 1	130	Analog 3	120
[F] 8beat 3	120	R&Funk 2	98	[F] House 2	130	Analog 4	90
[E] 8beat 1	120	R&Funk 3	98	[E] House 1	130	Analog 5	100
[E] 8beat 2	120	R&Funk 4	98	[E] House 2	130	Agogo1	120
16bt Rock1	100	R&Funk 5	98	Jungle 1	160	Agogo2	120
16bt Rock2	100	R&Funk 6	98	Jungle 2	160	Bongo	120
16bt Rock3	100	R&Funk 7	98	Jungle 3	160	Clave1	120
[I] 16bt Rock1	100	R&Funk 8	98	Jungle 4	160	Clave2	120
[I] 16bt Rock2	100	R&Funk 9	98	[I] Jungle	160	Conga1	120
[F] 16bt Rock1	100	R&Funk10	98	[F] Jungle1	160	Conga2	120
[F] 16bt Rock2	100	[I] R&Funk 1	98	[F] Jungle 2	160	Guiro	120
[F] 16bt Rock3	100	[I] R&Funk 2	98	[E] Jungle	160	Shaker1	120
[E] 16bt Rock1	100	[F] R&Funk 1	98	Techno 1	130	Shaker2	120
16beat 1	100	[F] R&Funk 2	98	Techno 2	130	Tambourin	120
16beat 2	100	[F] R&Funk 3	98	Techno 3	130	Timbales	120
16beat 3	100	[E] R&Funk 1	98	Techno 4	130	Triangle1	120
16beat 4	100	[E] R&Funk 2	98	Techno 5	130	Triangle2	120
16beat 5	100	JAZZ 1	100	Techno 6	130	CLICK1	120
16beat 6	100	JAZZ 2	100	Techno 7	130	CLICK2	120
16beat 7	100	[I] JAZZ1	100	[I] Techno 1	130	CLICK3	120
16beat 8	100	[F] JAZZ1	100	[I] Techno 2	130	CLICK4	120
16beat 9	100	[F] JAZZ2	100	[F] Techno 1	130	CLICK5	120
16beat10	100	[E] JAZZ	100	[F] Techno 2	130	CLICK6	120
16beat11	100	Motown	120	[E] Techno 1	130	CLICK7	120
[I] 16beat	100	[I] Motown	120	[E] Techno 2	130	CLICK8	120
[I] 16beat	100	[F] Motown	120	Bossa nova1	132	CLICK9	120
[F] 16beat 1	100	[E] Motown	120	Bossa nova2	132	CLICK10	120
[F] 16beat 2	100	SurfRock	169	[I] Bossa	132	CLICK11	120
[F] 16beat 3	100	[I] SurfRock	169	[F] Bossa	132	CLICK12	120
						CLICK13	120
						CLICK14	120

Beat:3/4 (11pattern)

Name	Tempo
3/4	150
[I] 3/4	150
[E] 3/4	150
JazzWaltz 1	150
JazzWaltz 2	150
[I] JazzWaltz	150
[F] JazzWaltz	150
Waltz	150
[I] Waltz	150
[F] Waltz	150
[E] Waltz	150

Beat:6/8 (12pattern)

Name	Tempo
6/8 Var1	120
6/8 Var2	120
6/8 Var3	120
6/8 Var4	120
6/8 Var5	120
6/8 Var6	120
[I] 6/8 1	120
[F] 6/8 1	120
[F] 6/8 2	120
[F] 6/8 3	120
[E] 6/8 1	120
[E] 6/8 2	120

Comp Program List

No.	Name	No.	Name	No.	Name	No.	Name	No.	Name
1	BassDr.Tight	11	Cymbal2	21	Syn.Bass2	31	Male Vocal2	41	Trumpet
2	BassDr.Loose	12	High Hat1	22	Piano1	32	Female Vocal1	42	Brass
3	BassDr.Fat	13	High Hat2	23	Piano2	33	Female Vocal2	43	Pipe
4	SnareDr.Tight	14	Percussion1	24	A.G.Strum	34	Rock Vocal	44	Violin
5	SnareDr.Loose	15	Percussion2	25	A.G.Arpegio	35	Pop Vocal	45	Strings
6	SnareDr.Fat	16	Finger Bass	26	Nylon Guitar	36	Ballade Vocal	46	Digital Drms
7	Tom-Tom1	17	Slap Bass	27	Jazz Guitar	37	Soul Vocal	47	Dance Mix
8	Tom-Tom2	18	Pick Bass	28	E.G.Lead	38	Rap Vocal	48	Total Comp1
9	Tom-Tom3	19	Wood Bass	29	E.G.Rhythm	39	Chorus	49	Total Comp2
10	Cymbal1	20	Syn.Bass1	30	Male Vocal1	40	Sax	50	Total Comp3

EQ Library List

No.	Name	No.	Name	No.	Name	No.	Name	No.	Name
1	Bass Drum1	11	Syn.Bass1	21	A.G.Strum2	31	Total EQ2	41	FM Radio
2	Bass Drum2	12	Syn.Bass2	22	A.G.Arpegio1	32	Total EQ3	42	Old Record
3	Snare Drum1	13	Piano1	23	A.G.Arpegio2	33	Bass Drum3	43	Telephone
4	Snare Drum2	14	Piano2	24	Brass Section	34	Snare Drum3	44	Bright
5	Tom-Tom	15	E.G.Clean	25	Male Vocal1	35	Tom-Tom2	45	Dark
6	Cymbal	16	E.G.Crunch1	26	Male Vocal2	36	Piano3	46	Heavey Low
7	High Hat	17	E.G.Crunch2	27	Female Vocal1	37	Piano Low	47	Fat Middle
8	Percussion	18	E.G.Dist1	28	Female Vocal2	38	Piano High	48	Heavy Low
9	E.Bass1	19	E.G.Dist2	29	Chorus&Harmony	39	Fine-EQ Casset	49	50Hz HumCut
10	E.Bass2	20	A.G.Strum1	30	Total EQ1	40	Narration	50	60Hz HumCut

Name Library List

Data Name Library: You can choose these names when renaming AnalogComp, EQ Library, Drive, Effect, Scene, Mark, Song, or Track.
File Name Library: You can choose these names when renaming PcFile, BackupFile, or WavFile.

Data Name Library		File Name Library	
Name	**Name**	**Name**	**Name**
Vocal	Intro	VOCAL	INTRO
Guitar	Fill	GUITAR	FILL
Bass	A Melo	BASS	A_MELO
Chorus	B Melo	CHORUS	B_MELO
Kick	Solo	KICK	SOLO
HiHat	Ending	HIHAT	ENDING
Snare	Take	SNARE	TAKE
Tom	Track	TOM	TRACK
RimShot	Dance	RIMSHOT	DANCE
Cymbal	Groove	CYMBAL	GROOVE
Ride	Rock	RIDE	ROCK
Crash	Pop	CRASH	POP
Percuss	Jazz	PERCUSS	JAZZ
Key	Fusion	KEY	FUSION
Piano	Loop	PIANO	LOOP
Strings	Live	STRINGS	LIVE
Organ	Studio	ORGAN	STUDIO
SFX	Event	SFX	EVENT
Count		COUNT	

Demo Song List

D32XD
001: Feelin' Free
002: Take Me Away

D16XD
001: Innocense
002: Take Me Away

"Feelin' Free"
Composed, arranged and performed by: Larry Dunn (Malaya Music), Foley (Foley's Music) and Sheldon Reynolds (Reyshel Music) copyright 2003

"Innocense", "Take Me Away"
produced by Huston Singletary, written and performed by OVER OCTOBER
WWW.HUSTONMUSIC.COM WWW.OVEROCTOBER.COM

Glossary

16-bit

→ Bit depth

24-bit

→ Bit depth

ADAT

Stands for **A**LESIS **D**igital **A**udio **T**ape recorder. A digital multi-track recorder produced by the ALESIS Corporation, and the recording and signal format that it used.

Algorithm

→ Effect algorithm

Assign

To specify the source/destination (or placement) of a channel or effect.

Attenuator, ATT

A device or circuit that reduces the level of a signal.

Audio CD

CD-DA (Compact Disc Digital Audio). Commonly called "music CDs." A CD that contains only music data.

Auto punch in-out

A function that automatically punches-in (begins recording) when playback reaches a pre-specified location, and punches-out (resumes playback) when recording has continued to a different pre-specified location.

Automation

A function that records and reproduces the operations or settings of mixer knobs and faders according to the passage of internal time code or of externally-input MTC data.

AUX

Inputs or outputs used to connect high-impedance line level signals. AUX OUT jacks send signals to an external recorder or effect processor, and AUX IN jacks receive signals from a recorder or electronic musical instrument.

Backup

To copy program data or recorded audio data files onto another storage medium for safekeeping.

Balanced connection

A connection using a cable with three conductors; two conductors sending the "hot" (positive phase signal) and "cold" (negative phase signal), and the third conductor being the ground. Balanced cables have the advantage of being less susceptible to hum or noise even when carrying low-level signals.

Bit depth

The number of bits used to express gradations in the amplitude of an analog signal when converting it to digital form. Normally 16 bits or 24 bits are used. The greater the number of bits, the more precisely the original sound can be recorded.

Blank disc

A disc on which nothing has yet been written.

Bypass

To send a signal without passing it through a specific circuit. By temporarily bypassing an effect, you can hear how it is modifying the sound.

Channel/CH/ch.

A unit of signal routing capacity; the path taken by a signal that is input to the mixer section as its volume and pan are adjusted before being output.

Cue

A mixing balance or volume balance adjustment that allows the performer to hear their own performance (e.g., through headphones) while they play.

Current drive

The drive that is currently selected and is the object of editing operations.

Current song

The song that is currently selected and is the object of editing operations.

Default settings

The factory-set state that appears when the power is turned on the first time after purchasing the unit. Also called "factory settings."

Dialog box

A window (containing buttons or check boxes etc.) that asks the user for instructions.

Digital input/output

Inputting or outputting audio data in digital form. The D32XD/D16XD comes with S/P DIF input/output as standard, but you can install an optional ADAT I/O card (DIB-8) to support ADAT input/output as well.

Disc At Once

A method by which the data to be recorded is converted into a complete disc image and then written to CD-R/RW in a single operation. Once this type of writing is performed, no further data can be written to that CD-R/RW even if it contained unused space.

Dither

Processing that is applied to minimize the noise that occurs when converting the bit depth of a digital audio signal as it is output.

Drive

A device used to store and reproduce data; e.g., a hard disk or CD-R/RW drive.

DSP

Stands for **D**igital **S**ignal **P**rocessor. A digital signal processing LSI optimized for processing audio or video. DSPs are built into recent recorders and effect processors. Their signal processing can be varied by software to perform a variety of operations.

Dynamic range

The range of volume level between silence and the maximum volume, expressed in dB (decibels). This is one of the elements that determines the accuracy with which a device can handle audio signals.

Effect algorithm

The calculation method that is the basis of an effect. The set of calculations that implement a certain type of signal processing.

Effect program

A program that specifies a set of parameters for use by an effect algorithm. The D32XD/D16XD provides preset programs that contain factory settings, and user programs that can store your own edited settings.

Equalizer, EQ

A device that modifies the frequency response to change the tonal character. There are various types, including parametric equalizers, graphic equalizers, and shelving equalizers.

Export

To output or write data for use by another system or program.

Expression pedal

A pedal used to control the volume or parameters of an instrument or effect.

Fade-in/fade-out

"Fade-in" means to gradually raise the volume to a desired level, and "fade-out" means to gradually lower the volume to silence.

Fader

A linear control that adjusts the volume of input channels and outputs.

Final effect

On the D32XD/D16XD, the effect processor that is applied to the master bus as the final stage of mixdown.

Finalize

To apply processing to a CD-R/RW disc that has been recorded using the Track At Once method, so that no further data can be written to it even though space may remain on the disc.

Foot controller

A term covering various foot-operated control devices such as foot switches and foot pedals.

Foot switch

A switch operating by pressing it with the foot.

Format

To prepare a storage medium (such as a hard disk) so that data can be written to it.

Frame rate

The number of frames that occupy one second of film; describes the type of time-code format used when synchronizing with video equipment.

Frequency band

A specific portion or region of the range from low to high frequencies.

Gain

Positive (+) boosts a signal, and negative (–) gain attenuates it.

Hard disk

A storage device containing one or more metal disks with magnetic recording surfaces. Also called "hard drive" or "hard disk drive."

Hiss

A type of noise that is output at a constant level regardless of the recording level, typical of magnetic recording tape.

Icon

A small graphic that visually indicates content or function.

Image file

Before writing data to a CD-R/RW, the data is converted into the form in which it will actually be written. This is the image file. An image file must be created before writing to CD-R/RW, but if the same song is to be written to another disc, the image file need not be re-created. This means that it will take less time to write the second disc because the image file can be reused.

Impedance

The alternating-current resistance to an audio signal. This generally indicates the added resistance of an audio signal input or output.

Import

To obtain or load data created by another system or program.

Insert effect

An effect used by inserting it into a mixer channel.

Library

A collection of multiple sets of data for a specific purpose. The D32XD/D16XD provides EQ libraries and name libraries.

Locate

A marker function that lets you store a desired location in a song, and move instantly to that location when desired.

Location

The distance from the beginning of the song, expressed as an absolute time, number of frames, or number of measures.

Mark

A point that can be assigned to a song to indicate a location that you want to use or store for later access.

Master

A device that controls another device (e.g., via MIDI). The device being controlled is called the "slave."

Master effect

On the D32XD/D16XD, refers to two effects that are applied to signals sent from the effect sends of each track. The output of each master effect is sent to the master bus.

Master track

A track that holds the stereo two-channel data for the completed song.

Mastering

The process of making final adjustments to the balance and overall tone of mixed-down two-track master data.

MIDI

MIDI (**M**usical **I**nstrument **D**igital **I**nterface) is a worldwide data transfer standard for sending a wide variety of performance-related data between electronic musical instruments and computers. If you are interested in learning more about MIDI, please refer to one of the many published books that provide helpful and in-depth explanations of MIDI.

MIDI Clock

A MIDI message used to synchronize the tempo between electronic musical instruments. Each beat is divided into 24 clock messages.

Mix down

Also called "track-down." The process of adjusting and combining multiple tracks into a fewer number of tracks, usually to a two-track stereo mix.

MMC

MMC (MIDI Machine Control) is a specification that allows recorder control signals such as Play, Stop, or Record to be transmitted via MIDI.

Monitor

The speaker system or headphones used to listen to the playback output, or the act of listening to this playback.

MTC

MTC (MIDI Time Code) is a specification that allows time location data to be transmitted via MIDI to allow synchronization between MIDI devices, MTRs, VTRs, and sequencers.

Mute

To silence a sound.

Optical

Refers to a connector that transfers a digital audio signal in the form of pulses of light sent over an optical fiber.

Optimize

To adjust hardware (e.g., a hard disk), software, or data so that it can achieve the maximum possible performance.

Overdubbing

A multi-track recording technique in which previously-recorded performances are played back while a performer records additional material on other tracks.

Pad

An attenuator that can be applied to an input signal entering a mixer in order to prevent the input amp stage from being overloaded by an excessively loud input signal.

Pair

A function that allows the settings of an adjacent odd-numbered and even-numbered channel to be edited in tandem, so that editing a value on one channel will cause a corresponding change on the other channel. This allows mixer settings to be made simultaneously for both channels of a stereo track.

Pan

The left/right position of a sound object in the stereo field or "panorama."

Partition

A method by which a single hardware drive is made to appear and function as multiple drives. Partitioning is normally performed when formatting a drive.

Peak hold

A function in which the maximum value reached by a meter is held for a specified duration (or until it is manually reset).

Phantom power

+48V power supply provided via a mic cable in order to power condenser microphones.

Phase

The phase of a signal. If signals are at different phases relative to each other, their volume may be incorrect when the signals are combined because the signals are partially canceling each other. Phrase reversal can occur if the positive (+) and negative (–) wires are accidentally switched, causing the signals to cancel to silence when they are added.

Post fader

The state of a signal after it passes through the fader.

Post gap

A blank space left after a song when creating a music CD.

Pre gap

A blank space left before a song when creating a music CD.

Pre-fader

The state of a signal before it passes through the fader.

Preset

A program or a set of data for a device that is fixed at the factory and cannot be changed by the user.

Protect

To temporarily prohibit changes to a saved program or setting.

Punch-in/punch-out

When you want to re-record just a specific portion of a performance, you "punch-in" at the point where you want to begin re-recording, and "punch-out" at the point where you want to stop recording and resume playback.

Q

A term that refers to the narrowness of the frequency band controlled by a filter. Higher 'Q' results in a narrower bandwidth, causing the frequency response curve to be a steeper 'hill' or 'valley'.

Redo

After using Undo to cancel an operation, Redo can be used to "undo the undo," reinstating the effect of the original operation.

Restore

To reload backed-up data so that it can once again be used.

S/N

Signal/Noise ratio. This is a numerical value indicating the ratio of the desired signal (audio signal) to the unwanted noise, and indicates the amount of residual noise produced by a device when it should be silent, in units of dB (decibels). A higher S/N value means less noise.

S/P DIF

Stands for Sony/Philips Digital audio Interface. The official name for this specification is IEC60958, but it is more commonly called S/P DIF. It is a format for transferring digital audio signals, and can convey two channels (one stereo pair) of audio.

Sampling rate

Also called sampling frequency. The frequency at which an analog input sound is converted into digital data. A sampling rate of 48 kHz means that the analog level is converted into digital form 48,000 times each second. The higher the sampling rate, the broader the frequency range that can be converted into digital data.

Sampling rate converter

A device that converts the sampling rate of a digital audio signal. For example, this allows the playback from a DAT recorder (48 kHz sampling rate) to be recorded directly to CD or MD (44.1 kHz sampling rate).

Scene

A complete set of parameters for the mixer section. The D32XD/D16XD can store 100 scenes for each song.

Scene memory

A function that stores a scene. A stored scene can be recalled at any time to reproduce those mixer settings.

Scrub

A function that allows track data to be played by operating the value dial. Since the track is played back according to the direction and speed with which the dial is operated, this is a useful way to precisely identify a specific location.

Send

A signal that is sent to another circuit or device. The D32XD/D16XD provides effect sends that are sent to master effects 1 and 2, AUX sends that are sent to the AUX OUT 1 and 2 jacks, and REC sends that are sent to the recorder tracks. The D32XD adds AUX OUT 3 and 4.

Sequencer

An automatic playback device that plays back stored MIDI data to control an electronic musical instrument such as a synthesizer.

Slave

A device being controlled (e.g., via MIDI) by another device, called the “master.”

Solo

A function that lets you hear only the sound of a selected channel during mixdown, etc.

Song

A unit of performance data. On the D32XD/D16XD, a song contains thirty two (sixteen on the D16XD) tracks of performance data, stereo master track data, mixer data, and effect settings.

Synchronize

To cause two or more electronic devices (such as musical instruments or recorders) to match their playback tempo and link operations such as start or stop. The device that controls the tempo etc. is called the “master,” and the device(s) that are being controlled are the “slaves.”

System file

A set of data containing software to operate hardware. New functionality can be added to a device by updating the system file.

Tap tempo

A method of specifying the tempo by the interval at which a key is pressed.

Tempo map

A set of events arranged by time, that specify a tempo, time signature, and rhythm pattern in units of measures. You can use the tempo map to switch tempo, time signatures, and rhythm patterns at specified measures.

Tempo source

The source by which the tempo is determined. On the D32XD/D16XD, you can choose one of three tempo sources; Manual which lets you specify the tempo directly, Tempo Map which uses the settings that you programmed in the tempo map, or Tempo Track which uses the tempo data recorded in the tempo track.

Tempo track

A memory area that records tap tempo data or MIDI Clock data received from an external MIDI sequencer.

Threshold level

A specified value which causes some operation to occur when it is exceeded by an input level.

Time code

Time information that is exchanged in order to synchronize recorders, rhythm machines, and sequencers etc.

Track At Once

A method by which individual tracks can be written to a CD one by one at different times, as long as free space remains on the disc.

Track status

The current state of a track (e.g., recording or playing).

Track/trk/tr

Something that can record, store, and play back an individual audio signal.

Trigger recording

A method by which recording is initiated when the input exceeds a specified threshold level.

TRS phone jack

A 1/4" stereo phone jack with separate conductors for the Tip, Ring, and Sleeve. In addition to conveying a stereo signal, this type of jack is also used for balanced connections.

Unbalanced connection

A connection using a cable that contains two conductors; one ‘hot’ (the signal) and the other ‘ground’. It has the disadvantage that hum noise can easily contaminate the signal.

Undo

After executing an operation, the act of returning to the state prior to execution.

Unity gain

To output an input signal at the same volume.

USB

Universal Serial Bus, a specification for connecting peripherals devices to a computer.

Virtual track

Each channel track and the master track of the D32XD/D16XD actually consists of eight separate areas called “virtual tracks” that can each hold a separate performance. For each track, you can select one of its virtual tracks for playback and recording.

WAV

The filename extension for a Wave file, the audio file format used mainly on Windows computers.

Word clock

A synchronization signal that unifies the timing at which digital audio data is transferred. If two or more devices are digitally connected, failure to synchronize the word clock will cause noise to be heard in the digital audio, or even make it impossible to transfer the digital audio signal.

XLR jack

The three-pin balanced connector used for most mic connections.

Zero cross point

A location at which the waveform level crosses ±0.

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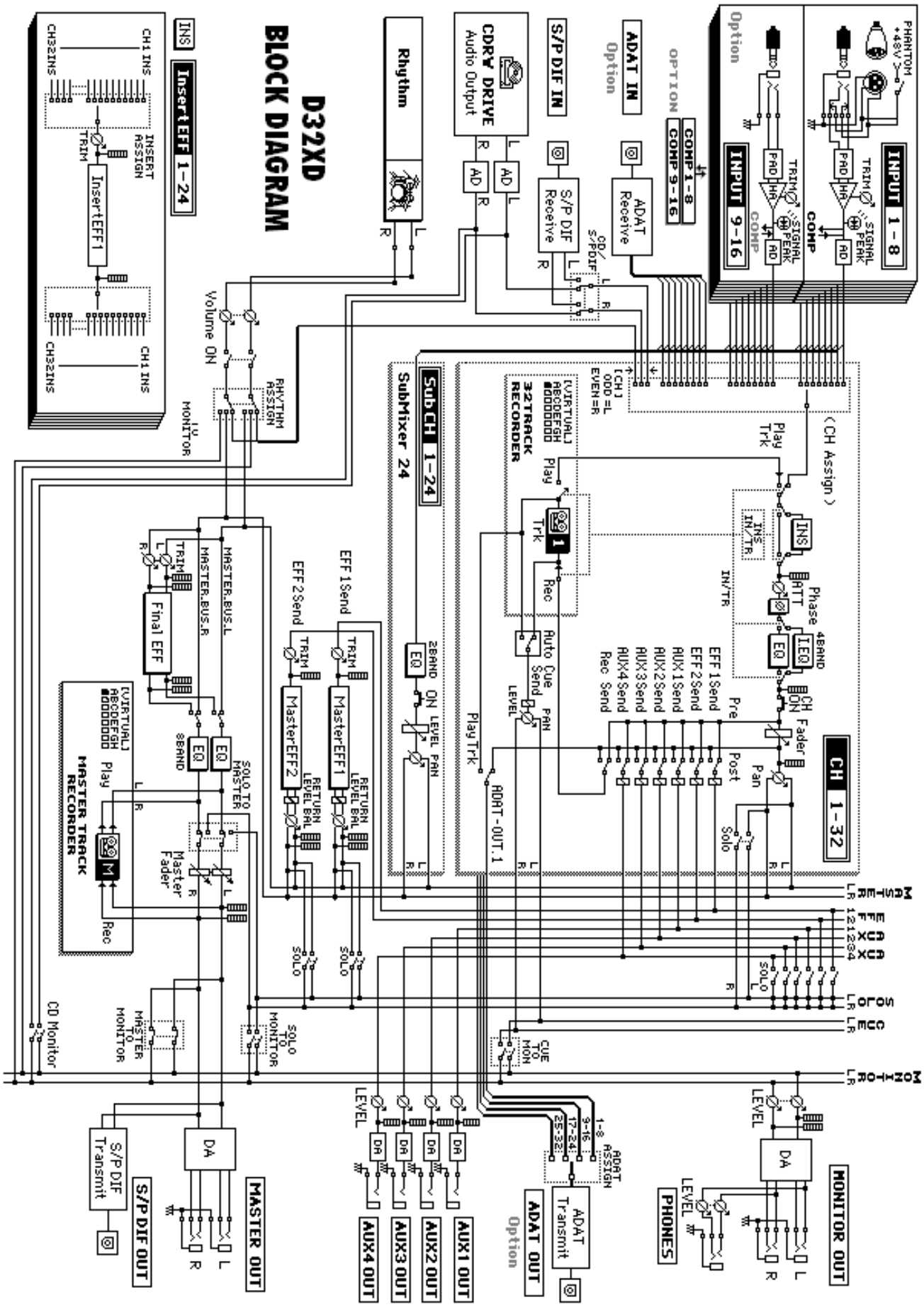

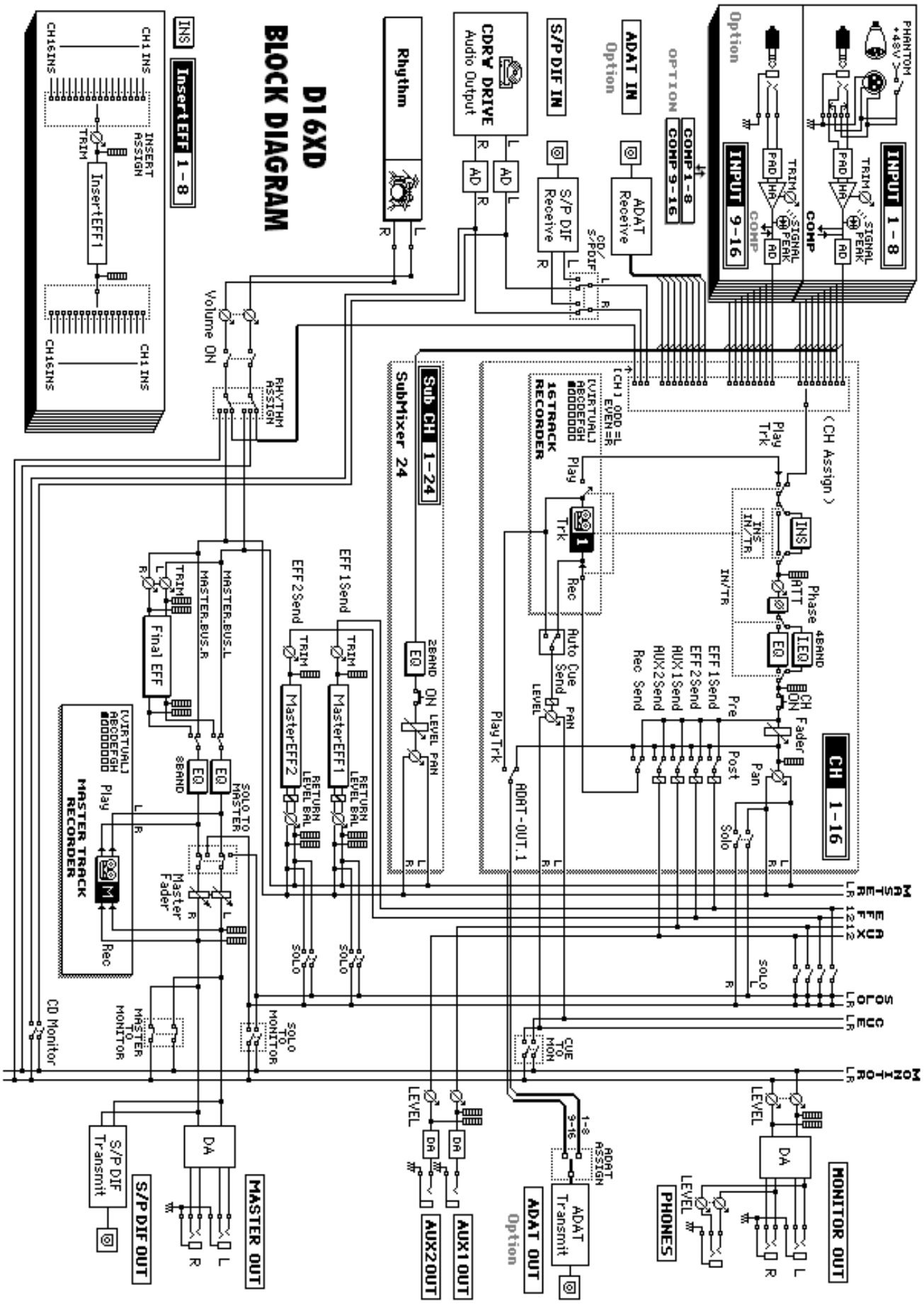
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PHONES
ADAT Transmit
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ADAT ASSIGN
AUX1 OUT
AUX2 OUT
MASTER OUT
S/P DIF Transmit
S/P DIF OUT
DA
AD

[Digital Recording Studio]

Model D32XD/D16XD

MIDI Implementation Chart

Date: 2003.4.14

Function		Transmitted	Recognized	Remarks
Basic	Default	×	×	
Channel	Changed	×	×	
Mode	Memorized	×	×	
	Messages	×	×	
	Altered	**********		
Note Number:	True Voice	×	0 – 127 *1	
		*********		
Velocity	Note On	×	○ *1	
	Note Off	×	×	
Aftertouch	Polyphonic (Key)	×	×	
	Monophonic (Channel)	×	○ *1	
Pitch bender		×	○ *1	
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	Song Position	○ *8	×	
	Song Select	×	×	
	Tune	×	×	
System Real Time	Clock	○ *8	○ *9	
	Command	○	○	
Aux Messages	Local On/Off	×	×	
	All Notes Off	×	×	
	Active Sense	×	×	
	Reset	×	×	

Notes

*1: Received as the EffectControl when it is selected in [SYSTEM] "Control".
*2: Transmitted/Received as the MixerControl when ControlChange is enabled in [MIDI]. (Consult your local Korg distributor for more information about MixerControl.)
*3: Transmitted/Received when ProgramChange is enabled in [MIDI].
*4: Transmitted when "MMC Transmit"or "MTC Master" is selected in [MIDI].
*5: Received when "MMC Receive" or "MTC Slave" is selected in [MIDI].
*6: Transmitted when "MTC Master" is selected in [MIDI].
*7: Received when "MTC Slave" is selected in [MIDI].
*8: Transmitted when "MIDIClockMaster" is selected in [MIDI].
*9: Received when "MIDIClock" is selected in [TEMPO] "TempoTrk" to record the tempo.
*10: Only for D32XD

Mode 1 : OMNI ON, POLY　　Mode 2 : OMNI ON, MONO　　: Yes ○

Mode 3 : OMNI OFF, POLY　　Mode 4 : OMNI OFF, MONO　　: No ×

Consult your local Korg distributor for more information on MIDI IMPLEMENTATION.

IMPORTANT NOTICE TO CONSUMERS

This product has been manufactured according to strict specifications and voltage requirements that are applicable in the country in which it is intended that this product should be used. If you have purchased this product via the internet, through mail order, and/or via a telephone sale, you must verify that this product is intended to be used in the country in which you reside.
WARNING: Use of this product in any country other than that for which it is intended could be dangerous and could invalidate the manufacturer's or distributor's warranty.
Please also retain your receipt as proof of purchase otherwise your product may be disqualified from the manufacturer's or distributor's warranty.

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